AN ARRANGEMENT OF BRITISH PLANTS,

ACCORDING TO

THE LATEST IMPROVEMENTS

OF THE

Linnean System;

WITH AN EASY

INTRODUCTION TO THE STUDY OF BOTANY.

ILLUSTRATED BY COPPER PLATES.

BY WILLIAM WITHERING, M.D. F.R.S.

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THE SEVENTH EDITION.

IN FOUR VOLUMES:

INCLUDING THE MOST RECENT DISCOVERIES, AND NUMEROUS ENLARGED ANNOTATIONS
ILLUSTRATIVE OF THE VEGETABLE ECONOMY.

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"Nor are the Plants, which Britain calls her own,
Few, or unlovely." MASON.

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"————————— Long work it were,
Here to account the endlesse progeny
Of all the Weeds that bud and blossom there;
But so much as doth need must needs be counted here."

SPENSER.

"The contemplation of Nature can never be otherwise than beneficial, and to see her beauties with an instructed eye will add a zest, even to the loveliest province of Creation, utterly unfelt by the careless observer." BRIT. BOT.

ENGLISH INDEX

TO THE

SECOND AND THIRD VOLUMES.

A

Abele tree, 486
Adder's Tongue, 981
Aconite, 666
Acrid Lobelia, 307
Adonis-flower, 676
Agrimony, 576
Alder Buckthorn, 323
Tree, 245
Alexanders, 392
Alkanet, 280
Alleluja, 561
All-heal, 715, 870
-seed, 210, 263
Goosefoot, 346
Almond-leaved Willow, 60
Alpine Barren-wort, 235
Bartsia, 726
Bistort, 498
Brook Saxifrage, 532
Bugle, 693
Campion, 564
Cat's-tail Grass, 148
Cotton-grass, 100
Dock, 455
Enchanter's Night-shade, 14
Flea-bane, 932
Fox-tail Grass, 149
Gentian, 359
Hair Moss, 1017
Hawkweed, 893
Lady's-mantle, 244
Meadow-grass, 168
Mouse-ear Chickweed, 565
Rock Cress, 780
Rue-weed, 674
Saw-wort, 907
Shepherd's-purse, 760
Speedwell, 17
Alpine Stitchwort, 551
Water Moss, 1010
White Crowfoot, 682
Willow-herb, 472
Alternate-leaved Earth Moss, 1007
Sengreen, 526
Spleenwort, 989
Alyssum, 750
Amaranth, 208
Ambroise, 695
American Cudweed, 925
Amphibious Persicaria, 494
Yellow Cress, 772
Amplexicaul Hawkweed, 898
Androgynous Marchantia, 1100
Andromeda, 521
Anemone, 671
Angelica, 377
Augular Solomon's Seal, 435
Anise, 396
Annual Beard Grass, 152
Cresset, 754
Meadow-grass, 169
Mercury, 514
Yellow Cress, 772
Apple Tree, 602
Thread Moss, 1040
Archangel, 708
Arctic Rush, 441
Sandwort, 553
Argentine, 633, 916
Aromatic Cicely, 390
Arrow-grass, 460
-head, 689
Asarabacca, 572
Ash-tree, 79
-weed, 398
Asp, or Aspen Tree, 487
Asparagus, 433,
Asphodel, 432, 459

Attenuated Feather Moss, 1075
Auricled Osier, 75
Autumnal Dandelion, 889
Gentian, 360
Pheasant's-eye, 676
Saffron, 94
Squill, 429
Star-grass, 7
Avens, 637
Awl-leaved Earth Moss, 1006
-shaped Spurrey, 568
Thread Moss, 1049
Awlwort, 754
Axillary Clustered Carex, 117

B

Bairn-wort, 947
Bald-money, 393
Balm-leaved Archangel, 724
Figwort, 738
Bane-berry, 643
Bank Cress, 772
Barberry, 451
Barley Grass, 204
Barren Brome-grass, 190
Fescue-grass, 179
Strawberry, 638
-wort, 235
Bartsia, 726
Basaltic Broom-rape, 745
Base Rocket, 585
Basil Thyme, 722
Bast, 656
Bastard Alkanet, 279
Balm, 724
Madder, 225
Mountain Ash, 607
Parsley, 365
Pimpernel, 234
Seg, 131
Stone Parsley, 380
Toad-flax, 341
Batchelors' Buttons, 957
Bay Oak, 503
Beaked Parsley, 388
Beak-rush, 109
Beard Grass, 152
Bearded Bed-straw, 224
Darnel, 200
St. John's-wort, 875
Wheat-grass, 206
Lateral Thread Moss, 1046
Wild Oat Grass, 194
Bearded Earth Moss, 1007
Beardless Earth Moss, 1006
Bear's-foot, 686
Bedford Willow, 60
Bed-straw, 221
Beech Tree, 576
Bee Flower, 43
Bee Nettle, 712
Bee Ophrys, 43
Beet, 352
Beggar's Needle, 387
Belle de Jour, 300
Bell-flower, 301
Bent, 198
Bent Grass, 154
Bergamot Mint, 702
Berry-bearing Alder, 323
Bethlem Star, 427
Betony, 713
Bidentate Jungermannia, 1086
Bilberry, 478
-leaved Willow, 66
Bindweed, 299, 500
Birch Tree, 247
Bird's Claw Thread Moss, 1047
Birthwort, 463
Bird Canary Grass, 142
Cherry, 592
Grass, 169
Bird's-eye Primrose, 290
-foot, 848
Clover, 863
Trefoil, 852
Knot-grass, 499
-nest, 368, 519
Twayblade, 36
-tongue Groundsel, 939
Bistort, 497
Biting Snakeweed, 495
Stonecrop, 558
Bitter Candy-tuft, 765
Cress, 770
Sweet, 319
Vetch, 836
Purple Willow, 56
Winter-cress, 774
Black Bearberry, 522
Bent, 150
-berry, 627
-berried Heath, 211
Bindweed, 500
Bitter-Vetch, 836
Bog-rush, 108
Bryony, 437
Cherry, 594

Black Couch-grass, 157
Currant, 335
-headed Cudweed, 929
Horehound, 716
Knap-weed, 960
Maiden Hair, 980
Matfellon, 960
Mullein, 313
Mustard, 786
Non-such, 867
Poplar, 488
Pot-herb, 392
Saltwort, 340
Seg, 132
-thorn, 595
Whortle-berry, 478
Worts, 478
Bladder Campion, 511
-nut, 402
Seg, 137
-wort, 24
Blite, 208, 343
Blood-coloured Gland-moss, 1012
Bloodwort, 235
Bloody Cranes bill, 800
Bloody-men's fingers, 29, 670
Bloody-twig, 236
Blue Bell, 431
-bottle, 950
Flea-bane, 932
-green Thread Moss, 1044
Moor-grass, 165
Mountain Anemone, 673
Navel-wort, 282
Pimpernel, 296
Rock Speedwell, 18
Sow-thistle, 882
Violet, 359
Bluish Mugwort, 925
Blunt-edged Club-rush, 103
Fern-like Feather Moss, 1069
-flowered Jointed Rush, 416
Bog-moss Jungermannia, 1087
Pimpernel, 297
-rush, 82, 108
Stitchwort, 550
Whortle-berry, 478
Bonnet du Pretre, [illegible]
Borage, 285
Bordered Thread Moss, 1057
Bottle Seg, 138
Boyton Willow, 57
Box Tree, 253
Bracteated Marsh Seg, 119
Bramble, 618, 627
Branched Broom-rape, 746
Bur-reed, 111
Dwarf Centaury, 322
Brandy-bottle, 654
Brank, 499
Bright-green Thread Moss, 1034
Bristle-leaved Bent Grass, 155
-pointed Oat-grass, 196
-stalked Club-rush, 103
Stonewort, 2
Ox-tongue, 882
Bristly Bristol Rock-Cress, 780
British Oak, 502
Brittle Polypody, 1000
Broad-leaved Anthoceros, 1103
Bell-flower, 303
Cicely, 390
Cotton-grass, 99
Dittander, 757
Dock, 457
Elm, 357
Everlasting Pea, 810
Garlic, 421
Groundsel, 910
Hairy Wood-rush, 14
Hand Orchis, 31
Helleborine, 15
Hen's-foot, 366
Jungermannia, 1083
Monadelphous Willow, 58
Mountain Willow, 6
Mouse-ear Chickw
561
Pond-weed, 256
Skerret, [illegible]
Stitchwort, 517
Tufted Centaury, 321
Water Cress, 77
-lipped Military Orchis, 3
-petalled Saxifrage, 535
-pointed Blite, 343
Smooth-leaved Willow Herb, 474
Brook Fringe Moss, 1020
Brooklime, 19
-weed, 308
Brome Grass, 187
Broom, 827
-rape, 713
Brown Beak-rush, 109
Bent Grass, 151
Cyperus, 107
Knap-weed, 959
Brownish Dwarf Willow, 70

Bruisewort, 537
Bryony, 92, 437
Bryum-like Feather Moss, 1058
Buckbean, 292
Buck's-horn Plantain, 234
-mast, 583
-thorn, 242, 322
Wheat, 499
Buddle, 950
Buffonia, 214
Bugle, 692, 693
-leaved Speedwell, 15
Bugloss, 286
Cowslip, 282
Bulbiferous Coral-wort, 766
Bulbous Crowfoot, 684
Fox-tail Grass, 150
-jointed Cat's-tail Grass, 148
Meadow-grass, 168
Bullace Tree, 595
Bulls'-faces, 161
-rush, 102
-weed, 960
Bullock's Lungwort, 311
Burdock, 361, 906
Burnet, 235, 663
Rose, 612
Saxifrage, 396
Burr, 906
Marigold, 918
Parsley, 365
-reed, 141
Bush Vetch, 844
Butcher's-broom, 93
Butter-bur, 935
-cups, 681
Dock, 457
and Eggs, 736
-fly Orchis, 27
Jaggs, 866
-wort, 22

C

Cabbage, 782
Daisy, 685
Calamint, 723
Calathian Violet, 358
Caltrops, 257
Calves'-snout, 732
Cammock, 833
Campion, 544, 563
Canada Flea-bane, 931
Canary Grass, 142
Can-dock, 652
Candy-tuft, 765
Canker Rose, 617
-weed, 938
Canterbury Bell, 304
Caper Spurge, 586
Capillary Seg, 128
Branched Earth Moss, 1006
Fringe Moss, 1025
Capon's-tail Grass, 180
Caraway, 394
Cardinal-flower, 307
Carex, 109
Carline Thistle, 917
Carrons, 504
Carrot, 368
Catchfly, 542, 563
Cuckoo-flower, 563
Catchweed, 227, 285
Caterpillars, 867
Cat-mint, 695
Cat's-ear, 902
-foot, 926
-tail, 140
Canary Grass, 142
Grass, 146
Celandine, 643
Celery, 397
-leaved Crowfoot, 680
Centaury, 229, 321, 477
Chafeweed, 930
Chaffweed, 234
Chamomile, 955
Goldins, 952
Charlock, 785
Cheese Renning, 226
Chequered Daffodil, 425
Cherry Tree, 592
Chervil, 388
Chesnut Tree, 577
Chickling Vetch, 841
Chickweed, 209, 548, 564
-leaved Willow-herb, 472
Winter-green, 466
Chive Garlic, 424
Chocolate Alpine Jungermannia, 1097
-headed Club Rush, 102
Cicely, 386, 389
Ciliated Jungermannia, 1095
Cinquefoil, 632
Lady's-mantle, 244
Ciphian Rose, 612
Cistus, 658

Clammy Groundsel, 936
Clary, 26
Cleavers, 227
Clematis, 673
Climbing Snakeweed, 500
Close-leaved Pondweed, 257
Clotweed, 361
Cloud Berry, 630
Clover, 853
Clove Pink, 539
Club Grass, 102
Rush, 101, 105
Clustered Alpine Rush, 445
Saxifrage, 528
Bell Flower, 305
Feather Moss, 1081
Targionia, 1098
Cock's Comb, 727
-foot Panick Grass, 145
Head, 849
Codlings and Cream, 470
Cole Seed, 783
Colewort, 751
Colt's Foot, 933
Columbine, 667
Common Brakes, 984
Butterwort, 22
Club Moss, 977
Elder, 401
Hair Moss, 1015
Hoary Thread Moss, 1043
Maiden Hair, 987
Osier, 75
Poly-pody, 992
Rough-stalked Feather Moss, 1067
Rush, 439
Spleenwort, 986
Stonewort, 21
Speedwell, 17
Thread Moss, 1030
Twayblade, 39
Compound-headed Kobresia, 139
Compressed Rush Grass, 108
Feather Moss, 1074
Comfrey, 284
Conical Marchantia, 1100
Convoluted Thread Moss, 1035
Cop Rose, 647
Coral Peony, 662
-rooted Twayblake, 37
Coriander, 387
Cork-barked Elm, 355
Corn Bell Flower, 306
Brome Grass, 188
Corn Catchfly, 545
Chamomile, 953
Cockle, 562
Crowfoot, 684
Flower, 959
Gromwell, 279
Honewort, 380
Horsetail, 973
Kale, 785
Marigold, 950
Mint, 706
Parsley, 380
Poppy, 647
Rose, 647
Salad, 91
Saw Thistle, 883
Spurrey, 567
Woundwort, 715
Cornel Tree, 236
Cornish Coast Carrot, 369
Heath, 484
Lovage, 376
Money-wort, 742
Cornwall Saxifrage, 376
Cotton Grass, 98
Thistle, 916
Weed, 920, 925
Couch Grass, 159, 206
Cowberry, 479
Cows and Calves, 670
Cow Cress, 758
Grass, 859
Parsley, 389
Parsnep, 375
Quakes, 175
Wheat, 729
Cowslip, 289
of Jerusalem, 283
Crab Tree, 602
Crack Willow, 65
Crake Berry, 211
Cranberry, 480
Crane's Bill, 800
Crap, 199
Creeping Bell Flower, 304
Cinquefoil, 634
Crowfoot, 684
Dog's-tooth Grass, 146
Dwarf Willow, 71
Fescue-grass, 183
Hawkweed, 894
Jungermannia, 1092
Loosestrife, 295
Marsh Feather Moss, 1073
Mouse Ear, 891

Creeping Mouse Tail Feather Moss, 1080
Pale-blue, Toad Flax, 734
Rest Harrow, 834
Satyrion, 35
Sea Meadow Grass, 173
Snakeweed, 495
Soft Grass, 159
Spike Rush, 105
Thistle, 911
Thrumwort, 465
Water Parsnep, 379
Wheat Grass, 206
White-veiled Feather Moss, 1080
Yellow Cress, 771
Cress Rocket, 754
Crested Cow Wheat, 729,
Dog's-tail Grass, 177
Meadow Grass, 171
Polypody, 997
Wheat Grass, 208
Crimson Grass Vetch, 838
Crisped Feather Moss, 1063
Fern, 984
Thread Moss, 1050
Crocus, 93
Crooked-stalked Earth Moss, 1007
Cross-leaved Goose Grass, 226
Heath, 484
-shaped Marchantia, 1099
-wort Bedstraw, 221
Madder, 226
Crow Berry, 211
Crowfoot, 629
-leaved Crane's Bill, 805
Crow Garlic, 423
Needles, 387
Cuckoo Bread, 561
Flower, 563, 769
Pint, 670
Cudweed, 925
Curled Dock, 454
-leaved Thread Moss, 1040
Pond-weed, 258
Thistle, 909
Thread Moss, 1015
Curling Feather Moss, 1068
Curant, 334
Curve-leaved Jungermannia, 1097
Curved Carex, 117
-beaked Thread Moss, 1046
-leaved Thread Moss, 1045
Mountain Wood-rush, 440
-stalked Fringe Moss, 1023
Cut-leaved Archangel, 709
Lettuce, 886
Cyclamen, 291
Cylindrical Feather Moss, 1064, 1077
Cyperus, 107
-like Carex, 131
Cyphel, 555
House-leek, 590*
Cypress Spurge, 590
-branched Feather Moss, 1074

D

Daffodil, 418
Daisy, 947
Dame's Violet, 779
Dandelion, 888
Dane-wort, 400
Danish Scurvy-grass, 763
Dark Broad-leaved Willow, 62
Mountain Fringe Moss, 1019
Long-leaved Willow, 63
Darnel, 199
Dead-Nettle, 708
-men's-fingers, 29
Dead Persicaria, 496
Deadly Nightshade, 317
Deceptive Thread Moss, 1050
Deciduous Thread Moss, 1047
Decumbent Heath-grass, 174
Dee-nettle, 708
Deer's-hair, 101
Delt Orache, 348
Deptford Pink, 539
Devil's-bit Scabious, 217
-guts, 299
Dewberry, 626
Dickson's Thread Moss, 1044
Dilated Jungermannia, 1093
Diminutive Thread Moss, 1033
Green Thread Moss, 1036
Dishley Willow, 60
Distant-flowered Carex, 117
-spiked Seg, 127
Dittander, 757
Dock, 453
Cress, 904
Dodder, 251
Dog Rose, 617
Dog's Grass, 206
Mercury, 514

Dog's-tail Grass, 177
  -tooth Grass, 146
  -wheat, 206
  -wood, 236
  Violet, 328
Dolphin-flower, 665
Doody's Furrowed Bull-rush, 103
Dotted Fringe Moss, 1026
Doubly-serrated Rose, 619
Double-tipped Heath, 484
Dover Catchfly, 543
  Grass, 184
Dove's-foot Crane's-bill, 804
Downy Feather-grass, 192
  Hemp-nettle, 712
  -leaved Dog Rose, 614
    Jungermannia, 1094
  Mountain Willow, 69
  Oat-grass, 194
Drank, 180
Drooping Bethlehem-star, 428
  Bulbous Saxifrage, 532
  -leaved Feather Moss, 1072
Dropwort, 609
Dull-green Feather Moss, 1079
Duck-weed, 49
Durmast Oak, 503
Dusky Crane's-bill, 804
  Rock Jungermannia, 1096
  Thread Moss, 1056
Dusty Frankenia, 452
Dutch Clover, 834
  Myrtle, 250
  Rushes, 976
Dwale, 317
Dwarf Alpine Cudweed, 928
    Juniper, 797
  Bay, 489
  Birch, 250
  Blasia, 1101
  Burnet Saxifrage, 397
  Cat's-tail, 140
  Cistus, 660
  Cornel, 237
  Crimson Bramble, 630
  Elder, 400
  Furze, 832
  Jungermannia, 1083
  Louse-wort, 732
  Long-headed Hair Moss, 1017
  Mallow, 808
  Mouse-ear Chickweed, 567
  Nipple-wort, 904
Dwarf Orchis, 30
  Quince-leaved Medlar, 601
  Round-headed Hair Moss, 1016
  Sea Wheat Grass, 207
  Silvery Carex, 123
  Spurge, 586
  Thistle, 915
  Thread Moss, 1032
  Tufted Centaury, 321
  Twayblade, 40
Dway-berries, 317
Dyer's Green-weed, 829
  -weed, 588

E

Early Hair-grass, 162
  Spotted Orchis, 29
  Winter-cress, 774
Earning-grass, 22
Earth-nut, 369
Eglantine, 616
Elbow-stalked Thread Moss, 1057
Elder, 400
Elecampane, 944, 945
Elm, 353
Elongated Carex, 116
  Thread Moss, 1049
Enchanter's Nightshade, 14
  -wort, 14
Endive, 905
English Catchfly, 542
  Galingale, 107
  Livelong, 928
  Myrtle, 13
  Scurvy grass, 763
  Stonecrop, 559
Eryngo, 361
Euphrasy, 728
Evening Primrose, 473
  Star, 473
Evergreen Alkanet, 281
Everlasting, 925, 927
  Pea, 840
Extinguisher Thread Moss, 1036
Expanding Thread Moss, 1040
Eye-bright, 728

Fair-Lady, 317
  Maids of February, 478

Fat-Hen, 345
Feaberry, 336
Featherfoil, 293
   Grass, 192
Feathered Water Moss, 1009
Felwort, 358
Female Polypody, 999
Fen-berry, 480
Fennel, 394
  -leaved Pond-weed, 259
Fern, 965
  Jungermannia, 1083
  Feather Moss, 1070
Fescue Grass, 179
Fetid Chamomile, 954
  Flag, 97
  Gladdon, 97
  Goosefoot, 346
  Hawk's-beard, 900
  Hellebore, 606
  Water Horse-tail, 3
Female Fern, 984
Few-flowered Jungermannia, 1089
   Seg, 115
  -leaved Thread Moss, 1034
Feverfew, 951
Fiddle Dock, 456
Field Baum, 722
  Chickweed, 566
  Eryngo, 362
  Gentian, 360
  Lady's-mantle, 244
  -madder, 220
  Marjoram, 719
  Scabious, 218
  Scorpion-grass, 278
  Southernwood, 922
  Wood-rush, 448
Fig Blite, 345
  -leaved Goosefoot, 345
  wort, 738
Filbert, 492
Fine Basket Osier, 58
  Bent Grass, 156
  Curved-leaved Feather Moss, 1070
  -leaved Bastard Parsley, 365
   Heath, 484
   Sandwort, 553
   Thread Moss, 1049
  -tufted Feather Moss, 1064
  -leaved Water Dropwort, 384
Fingered Seg, 122
Finger-flower, 739
Fir Club Moss, 978
Fior di Morto, 341
Fiorin Grass, 158
Fir, 117
  -branched Feather Moss, 1071
Fishy Willow, 71
Flesh-coloured Thread Moss, 1053
Five-fingered Root, 383
  -leaved Grass, 634
  -toothed Jungermannia, 1086
Flag, 97
Flat Feather Moss, 1061
  Jungermannia, 1092
  -leaved Jungermannia, 1087
  -stalked Meadow-grass, 173
   Pond-weed, 258
Flax, 407
  -leaved Goldylocks, 919
   Thread Moss, 1042
  -weed, 736
Flaxen Rush, 449
Flea-bane, 931
  Seg 114
  -wort, 943
Flesh-coloured Shrubby Speedwell, 17
   Thread-moss, 1053
Fleur-de-luce, 96
Flix-weed, 773
Float Fescue-grass, 185
  Meadow-grass, 185
Floating Bur-reed, 141
  Club-rush, 102
  Feather-moss, 1067
  Fox-tail Grass, 150
  Hornweed, 573
  Riccia, 1101
  Water Plantain, 465
Flowering Rush, 515
  Fern, 982
Fluellin, 17, 733
Fly Honeysuckle, 310
  Ophrys, 42
Folded-leaved Willow, 67
Fool's Parsley, 386
Forget-me-not, 276
Forked Fringe Moss, 1022
  Jungermannia, 1083, 1088
  -leaved, Riccia, 1102
  Spleenwort, 989
Fountain Fringe Moss, 1020
Four-leaved All-seed, 210
   True-love, 501
  -toothed Fringe Moss, 1019
Fowl Grass, 169
Four-cornered Thread Moss, 1051

Foxglove, 740.
-tail Feather Moss, 1075
-tail Grass, 149
Fragrant Sharp-leaved Mint, 704
Framboise, 625
French Asparagus, 427
Berries, 323
Cress, 774
Lungwort, 897
Mercury, 514
Tamarisk, 403
Wheat, 499
Willow, 469
Fresh-water Soldier, 668
Friar's-caps, 665
Crown, 913
Fringed Buckbean, 292
Rock Cress, 780
Sandwort, 554
Water Lily, 292
Fritillary, 425
Frizzled Thread Moss, 1042
Frœlichian Gland Moss, 1014
Frog-bit, 516
Pipe, 974
Frog's Lettuce, 257
Frog Satyrion, 31
Fuller's-herb, 538
Teazel, 215
Fumitory, 823
Furze, 830

G

Gale, 250
Galingale, 107
Gall of the Earth, 321
Garden Nightshade, 219
Garlick, 241
Hedge-mustard, 775
Gatten-tree, 236
Gatteridge-tree, 325
Geniculate Fox-tail Grass, 150
Gentian, 358
Gentianella, 229
German Catchfly, 563
Madwort, 285
Germander, 694
Chickweed, 21
Speedwell, 20
Giant Throat-wort, 303
Gibbous Duck-weed, 50
Gill, 707
Gilliflower, 776
Gipsy-wort, 25
Gladwyn, 97
Glandular Bramble, 628
Glasswort, 347, 352
Glastonbury Thorn, 597
Glaucous Club-rush, 103
Hairy Hawkweed, 896
Heath Carex, 129
-leaved Rose, 619
Marsh Stitchwort, 549
Meadow-grass, 174
Mountain Willow, 69
Riccia, 1102
Straight-leaved Carex, 135
Globe-flower, 685
-sheathed Jungermannia, 1088
Globular-jointed Jungermannia, 1097
Goat's-beard, 880
Gold-cup, 684
of Pleasure, 750
Golden Cinquefoil, 636
Dock, 456
Lungwort, 897
Oat, 195
Osier, 64
-rod, 942
Sampire, 946
Saxifrage, 526
Thread Moss, 1054
Goldilocks, 680, 919, 1015
Goldins, 950
Good King Henry, 343
Gools, 950
Gooseberry, 336
Corn, 442
-foot, 343
-grass, 223, 227
-tongue, 957
Gorgomel Sallow, 60
Goslings, 75
Go-to-bed-at-noon, 881
Gout-(Goat)-weed, 398
Gowan, 687, 947
Gowlans, 685, 950
Grass-leaved Sea Orache, 349
of Parnassus, 404
-poly, 573
-wrack, 669
Grassy Crowfoot, 680
Pond-weed, 259
Great Alpine Oat-grass, 196
Bilberry, 478
Bindweed, 299
Bistort, 497

Great Bladderwort, 24
Burnet Saxifrage, 396
Bur Parsley, 366
Cat's-tail, 140
Common Seg, 136
Cowslip, 289
Crowfoot, 679
Fen Ragwort, 939
Golden Maiden Hair, 1015
Hairy Willow-herb, 470
Thread Moss, 1052
Hartwort, 364
Hedge Bedstraw, 225
Henbit, 709
Mullein, 312
Panicled Seg, 121
Pendulous Seg, 123
Round-leaved Sallow, 74
Seg, 121
Sharp Sea Rush, 438
Snap-dragon, 736
Spleen-wort, 993
Sundew, 412
Transparent Chara, 4
Triangular Feather Moss, 1067
Water Dock, 455
Water Horse-tail, 974
Water Parsnep, 378
Wild Valerian, 90
Wood-rush, 448
Greater Bird's-foot Trefoil, 863
Bur-reed, 141
Dodder, 251
Duck-weed, 50
Fern-like Feather Moss, 1069
Knap-weed, 961
Maple, 474
Plaintain, 230
Prickly Seg, 120
Rue-weed, 676
Rough Horse Tail, 976
Stitchwort, 547
Thrum-wort, 464
Water Caltrops, 258
Moss, 1008
s, 50
Greek Valerian, 300
Green and Gold Carex, 131
-flowered Hellebore, 686
Globular Gland Moss, 1011
Goosefoot, 345
-leaved Hound's-tongue, 282
Man Ophrys, 41
Green Panick Grass, 144
Ribbed Spleenwort, 988
Satyrion, 34
-sauce, 458
-scaled Groundsel, 937
Tapering Gland Moss, 1013
Tree, 593
-weed, 828
Whortle-leaved Willow, 66
Grey Bog Moss, 1004
Cushioned Thread Moss, 1056
Hair-grass, 162
-mill, 279
Poplar, 487
Sallow, 72
Seg, 120
Spreading Bedstraw, 224
Grig, 481
Gromwell, 279
Ground Furze, 833
Ivy, 707
Groundsel, 935
Guilder-rose, 398
Guinea-hen-Flower, 425

H

Hair-Grass, 160
-like Water Moss, 1010
Pointed Thread Moss, 1031
Hairy Alpine Whitlow-grass, 755
-branched Sallow, 78
-flowered Yellow Vetch, 846
Green-weed, 829
-leaved Ladies'-smock, 768
Polypody, 994
Mithridate Pepper-wort, 759
Mountain Milk Vetch, 851
Pointed Fringe Moss, 1024
Rest-harrow, 823
St John's-wort, 874
Seg, 138
Stonecrop, 557
Wall Cress, 781
Water Mint, 703
Wood Brome-grass, 190
Violet, 325
Hallerian Feather Moss, 1062
Hand-Orchis, 31
Hardbeam, 574
Fescue-grass, 182
Grass, 201
Meadow-grass, 172
Rush, 439

- Harebell, 301, 430
  - Squill, 430
- Hare's Bread, 670
  - -ear, 363
    - Hedge-mustard, 776
  - -foot Trefoil, 857
  - Lettuce, 884
  - -tail Cotton-grass, 98
- Hariff, 227
- Hart's Clover, 853
  - -tongue, 986
  - -wort 364
- Harvest Bells, 358
- Hassocks, 161
- Haver, 194
- Hawk's-beard, 900
  - -nut, 369
- Hawkweed, 891
  - Ox-tongue, 882
- Hawthorn, 597
- Hazel-leaved Bramble, 627
  - -nut Tree, 492
- Head-wark, 647
- Healing Plant, 231
- Heart-leaved Valerian, 91
  - -leaved Twayblade, 10
  - 's-ease, 330
  - Trefoil, 867
- Heather, 481
- Heath, 481
  - -bell, 301
  - Grass, 154
  - Mat-weed, 98
  - Peasling, 837
  - Polypody, 995
- Hedge Honewort, 380
  - Mustard, 772
  - Parsley, 360
  - Woundwort, 714
- Hellebore, 685
- Helleborine, 45
- Hemispherical Marchantia, 1099
- Hemlock, 370, 385
  - -leaved Stork's-bill, 798
  - Water Drop-wort, 382
- Hemp Agrimony, 919
  - -nettle, 711
- Henbane, 316
- Henbit, 716
  - Archangel, 709
- Hen's-foot, 365
- Hep Tree, 617
- Herbaceous Willow, 68
- Herb Bennet, 637
  - Christopher, 643
- Herb Gerard, 398
  - Paris, 501
  - Robert, 807
  - Shepard, 701
  - Trinity, 330
  - Twopence, 295
- Herd Grass, 147
- Highland Cudweed, 927
- Hindberry, 625
- Hoary Cress, 759
  - Dwarf Cistus, 658
  - Groundsel, 938
  - Mullein, 313
  - Plantain, 231
  - Shrubby Stock, 778
  - Woundwort, 716
- Hog Cherry, 592
- Hog's Fennel, 373
- Hog-weed, 375
- Holly Tree, 254
- Holy Grass, 159
- Honewort, 380
- Honeysuckle, 309
  - Trefoil, 858
- Honeywort-leaved Hawk-weed, 898
- Hooded Water-milfoil, 24
- Hop, 350
  - Trefoil, 861
- Horehound, 716
- Hornbeam Tree, 574
  - -weed, or Horn-wort, 573
- Horned Clover, 866
  - Lake-weed, 8
  - Poppy, 644
- Horse-bane, 384
  - -mint, 699
  - -radish, 764
  - -tail, 972
- Hound's-berry, 236
  - -tongue, 281
- House-leek, 590
- Hurt-sickle, 959
- Hyacinth, 431
- Hyssop-leaved Loosestrife, 574

- Impatient Ladies'-smock, 767
- Imperforate St. John's-wort, 872
- Incurved Hair Moss, 1017
- Inelegant Ragwort, 938
- Insane-root, 326
- Insipid Yellow Stonecrop, 558

Intermediate Bladderwort, 24
  Winter-green, 524
Interrupted Club Moss, 978
Involute Alpine Saxifrage, 535
Iris, 95
Irish Menziesia, 481
  Rose, 615
  Rush Cress, 754
  Spurge, 588
  Worts, 481
Iron Pear, 601
Isle of Man Cabbage, 785
Isnardia, 243
Ivy, 337
  Chickweed, 21
  -leaved Bell-flower, 305
    Crowfoot, 681
    Cyclamen, 291
    Duck-weed, 49
    Scurvy-grass, 763
    Snap-dragon, 733
    Speedwell, 21
    Wall Lettuce, 887

J

Jack-by-the-hedge, 775
Jacob's Ladder, 300
Jagged Jungermannia, 1084
Jagged-leaved Anthoceros, 1102
    Crane's-bill, 802
  Long Orache, 349
Jersey Cudweed, 925
Jointed Charlock, 789
  Glasswort, 5
Juniper, 795
Jur-nut, 369

K

Kernel-wort, 728
Kelpwort, 352
Kidney-leaved Saxifrage, 529
  -shaped Mountain Sorrel, 453
  Vetch, 834
  -wort, 556
King's Clover, 853
Kipper-nut, 369
Knappia, 152
Knapweed, 959
Knawel, 537
Knee-holly, 93
Knolles, 783
Knot-grass, 340, 499
Knotted Hedge Parsley, 367
  Spurrey, 568
Knotty Crane's-bill, 802
  -rooted Figwort, 728
Knout-berries, 630
Kobresia, 139

Lady's Cushion, 405, 535
  -finger, 834
  -hair, 175
  -mantle, 243
  Seal, 437
  Slipper, 48
  -smock, 767
  Traces, 38
Lanceolate-leaved Thread Moss, 1042
Larger Downy-fruited Carex, 133
Large-flowered Butterwort, 23
    Hemp-nettle, 712
    Mullein, 314
    St. John's-wort, 875
    Willow-herb, 470
Lakeweed, 8
Lamb's-lettuce, 91
  -toe, 834
Lancashire Asphodel, 432
Lanceolate Pond-weed, 259
Larkspur, 665
Lateral-fruited Earth Moss, 1007
  Water Moss, 1010
  Thread Moss, 1042
Laurel Mezereon, 490
Lavender Thrift, 406
Leafless Buxbaumia, 1001
Leafy-branched Spurge, 589
  Buxbaumia, 1011
Least Anise, 397
  Bent Grass, 152
  Bladderwort, 24
  Club-grass, 103
  Cudweed, 929
  Extinguisher Thread Moss, 1051
  Goose-grass, 223
  Lettuce, 887
  Riccia, 1101
  Rush, 441
  Snap-dragon, 735
  Spike-rush, 106
  Twayblade, 40

Least Willow, 68
Ledum, 520
-leaved Cistus, 660
Leopard's-bane, 947
Lesser Broom-rape, 744
Bull-rush, 103
Calamint, 722
Celandine, 677
Common Carex, 136
Crested Polypody, 998
Dodder, 252
Duck-weed, 50
Hemlock, 386
Matted Fringe Moss, 1027
Nettle, 240
Panicled Seg, 122
Rue-weed, 675
Scull-cap, 725
Sharp Sea Rush, 438
Snap-dragon, 736
Stitchwort, 549
Thrumwort, 465
Water Caltrops, 257
Moss, 1008
Parsnep, 379
Winter-green, 525
Lettuce, 885
Level-topped Sandwort, 554
Lily of the Valley, 434
Lime Tree, 655
-stone Thread Moss, 1032
Linden Tree, 655
Linear Thread Moss, 1053
Ling, 481
Linnæa, 741
Linseed, 407
Lion's-tail, 718
Little Bulbous Rush, 444.
Prickly Carex, 115
Sun-flower, 660
Tree Willow, 64
Truncated Thread Moss, 1037
Live-long, 557
Liver-green, 1099
wort, 968
Livid Dwarf Willow, 64
Lizard-flower, 33
Lobel's Catchfly, 545
Lob Grass, 188
London Pride, 529
Rocket, 773
Long-awned Sheep's Fescue, 182
-beaked Water Feather Moss, 1065
Bracteated Carex, 126
Long Grass, 169
-headed Feather Moss, 1064
Brooklime, 19
Floating Pond-weed, 257
Sallow, 75
Sundew, 411
Thread Moss, 1051
Water Hemlock, 385
Purples, 29, 670
-rooted Cat's-ear, 903
Rough-headed Poppy, 646
Smooth-headed Poppy, 648
-stalked Colt'sfoot, 934
-stalked Crane's-bill, 803
Earth Moss, 1008
-styled Rose, 618
Trailing Feather Moss, 1071
Loose-flowered Alpine Carex, 131
Panick Grass, 144
Pendulous Seg, 124
-spiked Rock Carex, 128
-strife, 294, 573
Lords and Ladies, 670
Louse-wort, 732
Lovage, 376
Love-in-idleness, 330
Lungwort, 282, 897
Lucern, 865
Lucken Gowans, 685
Lyme Grass, 202

M

Madder, 228
Goose-grass, 225
Madnep, 375
Madwort, 285
Maiden Pink, 541
Makinboy, 588
Male Fern, 995
Poly-pody 995
Mallow, 808
Manured Teasel, 215
Many-branched Water Feather Moss, 1071
-flowered Jungermannia, 1088, 1092
-headed Bog Wood-rush, 449
Jointed Rush, 447
-lobed Jungermannia, 1084
-spiked Goosefoot, 344
-stalked Spike-rush, 106

Many-stalked Stitchwort, 549
Maple, 476
-leaved Goosefoot, 345
Mare's-tail, 6
Marigold, 962
Marine Flea-wort, 944
Marl Clover, 857
Marram, 198
Marsh Andromeda, 521
Arrow-grass, 460
Bent Grass, 155, 157
Centory, 229
Cinquefoil, 639
Clover, 293
Club Moss, 978
Cudweed, 929
Dandelion, 889
Felwort, 358
Flea-wort, 943
Gentian, 358
Goose-grass, 223
Hedge-hog Grass, 125
Helleborine, 46
Horse-tail, 974
Ledum, 520
Louse-wort, 732
Mallow, 807
Marigold, 687
Milk-weed, 372
Mouse-ear Chick-weed, 567
Palmate Orchis, 31
Parnassus, 104
Polypody, 996
Ragwort, 939
St. John's-wort, 873
Samphire, 5
Scheuckzeria, 549
Sessile Fringe Moss, 1020
Succory-leaved Hawk-weed, 896
Tofieldia, 459
Twayblade, 45
Vetchling, 841
Violet, 328
Whortle-berry, 480
Woundwort, 715
Masterwort, 391
Mat-felon, 961
-grass, 98
Mather, 954
Matted Feather Moss, 1065
Jungermannia, 1096
Sea Lavender, 407
Maudlin-wort, 950
Mauls, 808
May Lily, 434
-weed, 952
Mazzards, 594
Meadow Barley-grass, 204
-bout, 687
Burnet, 235
Fescue-grass, 184
Fox-tail Grass, 149
Grass, 165
Ladies'-smock, 769
Lychnis 563
Oat-grass 195
Orchis, 28
Pink, 563
Rue-weed, 675
Saffron, 461
Sage, 26
Soft Grass, 159
-sweet, 610
Thistle, 914
Mealy Guelder-rose, 398
Medick, 865
Medlar Tree, 600
Melancholy Thistle, 915
Melic Grass, 163
Melilot, 853
Trefoil, 867
Menziesia, 480
Mercury, 514
Merries, 594
Meu, 393
Mezereon, 489
Michelian Cat's-tail Grass, 148
Milfoil, 957
Military-Orchis, 30
Milk Parsley, 372
Thistle, 913
Vetch, 140, 863
-weed, 372, 884
-wort, 340, 826
Millet, 279
Cyperus Grass, 104
Grass, 153
Mill-mountain, 409
Mint, 698
Minute Auricled Jungermannia, 1088
Diaphanous Thread Moss 1054
Gray Jungermannia, 1097
Missletoe, 240
Mithridate [illegible]-wort, 758
Mock [illegible]
Moenchia, [illegible]
Money-wort, 295

Monk's-hood, 665
  Rhubarb, 455
Moon Daisy, 950
  -wort, 982
Moor-berry, 480
  -grass, 100, 165, 633
  -worts, 481
Moschatel, 501
Moss, 966
  -berry, 480
  Campion, 546
  -crop, 98
  Cyphel, 555
  Rush, 442
  Saxifrage, 535
Mossy Alpine Saxifrage, 533
  Red-shanks, 209
Moth Mullein, 314
Mother of Thyme, 719
  -wort, 718
Mountain Ash, 606
  Avens, 639
  Bedstraw, 223
  Bramble, 630
  Currant, 334
  Enchanter's-wo
  Flea-wort, 944
  Garlic, 422
  Germander Spee
  Hawkweed, 89
  Madwort, 20
  Melic Grass, 16
  Pink, [illegible]41
  St. John's-wort, [illegible]
  Sorrel, 453
  Spiderwort, 432
  Spignel, 372
  Strawberry-tree, 522
  Violet, 331
Mouse Barley, 204
  -ear, 276, 891
    Hawkweed, 891
    Pearl-wort, 262
  -tail, 414
    Feather Moss, 1080
Mud Rush, 442
  Seg, 131
Mugweed, 221
Mugwort, 221, 924
Mullein, 312
Mushroom, 971
Musk Mallow, 810
Musk Thistle, 911
Musky Stork's-bill, 799
Mustard, 785
Myrtle Flag, 437

N

Nail-wort, 533, 755
Naked-flowering Crocus, 95
  Lady, 461
  -stalked Teesdalia, 766
    Yellow Poppy, 646
Narrow-leaved Cudweed, 929
  Dittander, 758
  Elm, 355
  Everlasting Pea, 840
  Gland Moss, 1013
  Hare's-ear, 364
  Hairy Woodrush, 448
  Hawkweed, 894, 900
  Helleborine, 47
  Mouse-ear Chickweed, 565
  Thread Moss, 1052
  Wall Mustard, 787
  Marsh Speedwell, 19
  Mint, 705
  Oat-grass, 195
  Pale Flax, 409
  Pondweed, 494
  -Skerret; 379
  -lipped Military Orchis, 31
Navelwort, 282, 556
Needle Furze, [illegible]0
  Green-weed, 830
Nettle, 238
  Hemp, 712
  -leaved Bell-flower, 304
    Goosefoot, 346
Net-work Willow, 68
Nep, 695
Night-flowering Catchfly, 546
  shade, 317
Nipple-wort, 904
None-so-pretty, 529
Nonsuch, 867
Norfolk Mullein, 313
Northern Elm, 355
  Hair Moss, 1018
  Holy Grass, 159.

Northern Thread Moss, 1046
Nose-bleed, 957
Nottingham Catchfly, 543
Notched Jungermannia, 1093
Nuns, 28
Nutant Double-tooth, 915

Oak Fern, 990
  Tree, 502
  -leaved Goosefoot, 345
Oat Grass, 188, 192
Obtuse-leaved Gland Moss, 1012
  Thread Moss, 1031
Old Man's Beard, 673
Olive-leaved Sallow, 73
One Berry, 501
  -flowered Daffodil, 419
Open-awned Brome-grass, 188
Opium Poppy, 648
Ophrys, 36
Opposite-leaved Sengreen, 527
  Polypody, 994
Orache, 347
Orange Hawkweed, 891
  Mint, 702
  -spiked Fox-tail Grass, 151
Orchard Grass, 176
Orcheston Grass, 169
Orchis, 30, 27
Orpine, 557
Osier, 58
Oval-fruited Corn-salad, 91
  -spiked Seg, 116
Ovate-leaved Jungermannia, 1091
  Gland Moss, 1013
Owler, 245
Ox-eye, 950, 953
  Chamomoile, 956
  -lip, 289
  -tongue, 882

P

Paddow-pipe, 6
Paigle, 289
Painted Cup, 726
  Lady-grass
Painting Root, 279

Pale Butterwort, 22
  Daffodil, 420
  -flowered Snakeweed, 496
  Fringe Moss, 1027
  Globular-flowered Jungermannia, 1087
  Hairy Crowfoot, 683
  -leaved Thread Moss, 1035
  Perfoliate Honeysuckle, 308
  Persicaria, 496
  Seg, 130
  Smooth-leaved Willow-herb, 471
Pallid Bent Grass, 156
Panick Grass, 144
  Millet Grass, 153
Pansy, 330
Park-leaves, 869
Parsley Fern, 984
  -leaved Elder, 402
  -piert, 244
  Water Dropwort, 383
Parsnip, 391
Pasque-flower, 671
Patience Dock, 498
Paul's Betony, 18
Pea, 835
Pear Tree, 601
  -shaped Thread Moss, 1032
Peach-leaved Bell-flower, 302
Pearl Plant, 279
  -wort, 261
  Spurrey, 569
Pearly Everlasting, 925
Pedatifid Saxifrage, 536
Pedunculated Jungermannia, 1097
  Sea Orache, 349
Pellitory of the Wall, 237
Pellucid Fringe Moss, 1022
Penny Cress, 759
  -royal Mint, 706
  -weed, 727
  -wort, 362
Pendulous Feather Moss, 1078
  Fringe Moss, 1024
  Sea Lyme-grass, 202
  Thread Moss, 1056
  Wood Carex, 129
Peony, 662
Pepper Grass, 979
  Cabbage, 670
  mint, 710
  wort, 757
  ge Bush, 451

Percepier, 244
Perennial Beard Grass, 152
    Blue Flax, 408
    Dove's-foot Crane's-bill, 801
    Goosefoot, 343
    Mercury, 514
Perfoliate Pond-weed, 257
    Shepherd's-purse, 760
    Yellow-wort, 477
Perforated St. John's-wort, 871
Periwinkle, 341
Persian Willow, 469
Persicaria, 494
Petty Muquet, 226
    Spurge, 586
    Whin, 830
Pig-nut, 369
Pile-wort, 677
Pill-wort, 979
Pimpernel, 295, 296
    Rose, 612
Pink, 539
    Seg, 128
Pipe-wort, 219
Pleasant-in-sight, 563
Plane Tree, 474
Plant of Gluttony, 237
Plantain, 230
    -leaved Sandwort, 551
    Shoreweed, 230
Plowman's Spikenard, 930
Plum Tree, 594
    -leaved Willow, 66
Plumose Feather Moss, 1068
Plumy-crested Feather Moss, 1070
Plymouth Rush-grass,
Poetic Narcissus, 419
Pointed Bog Feather Moss, 1077
    Club-rush, 101
    Thread Moss, 1041
    -leaved Pond-weed, 258
Polyanthus, 289
Poly-mountain, 521
Polyphyllous Thread Moss, 1043
Pond-weed, 8, 256
Poor-man's Pepper, 757
Poplar Tree, 486
Poppy, 647
Portland Spurge, 587
Powdery Mullein, 313
    Sea-heath, 452
Prickly Club Moss, 977
    Glass-wort, 352
Prickly Lettuce, 885
    Pettigree, 93
    Polypody, 998
    Serrate-headed Carex, 114
    Stonewort, 3
    Twig Rush, 82
    Unexpanded Rose, 613
Prickwood, 236, 325
Procumbent Dittander, 765
    Pearl-wort, 261
    Sea Meadow-grass, 172
    Sibbaldia, 410
    Speedwell, 21
    Water Parsnip, 379
Proliferous Chara, 5
    Fringe Moss, 1027
    Ladies' Traces, 38
    Pink, 539
Prostrate Dwarf Willow, 70
Prim, 13
Primrose, 288
    Peerless, 420
    -scented Bird's-nest, 519
Print, 13
Privet, 13
Privy Saugh, 13
Proliferous Feather Moss, 1069
Ptarmigan-leaf, 68
Puddock Pipe, 974
Purging Flax, 409
Purple Bottle, 1012
    Broom-rape, 745
    Clover, 858
    Cow-wheat, 729
    -flowered Moneywort, 297
    Foxglove, 740
    Goat's-beard, 881
    Gromwell, 280
    Helleborine, 48
    -spiked Loosestrife, 573
    -stalked Fringe Moss, 1023
    Marshlocks, 639
    Medick, 865
    Melic Grass, 164
    Mountain Milk-Vetch, 850
    Mullein, 315
    Saxifrage, 380
    Spurge, 585
    Spurrey, 555
    -tipped Jungermannia, 1086
Purslane, 452
Pyramidal Bugle, 692
    Orchis, 21

Quaking-Grass, 175
Queen of the Meadows, 6[illegible]0
Queen's Stock, 778
Quick, 597
Quicken-tree, 606
Quick-in-hand, 332
Quills, 950
Quillwort, 980
Quince-leaved Sallow, 74
Quinsey-wort, 220

R

Radish, 789
Ragged Robin, 563
Ragwort, 937
Rambling Mountain Feather Moss, 1073
Ramping Fumitory, 825
Rampions, 302
    Bell-flower, 302
Ramsons, 424
Rape, 783
Rash-berry, 478
Raspberry Bush, 625
Ray Grass, 199
Reclining Jungermannia, 1090
    Headed Thread Moss, 1052
Recurved Jungermannia, 1094
    Thread Moss, 1054
Red Alpine Thread Moss, 1057
    Bearberry, 523
    -berried Bryony, 92
    Trailing Arbutus, 523
    Bartsia, 727
    Clover, 858
    Darnel, 199
    Dead-nettle, 708
    Fringed Thread Moss, 1037
    -fruited Dwarf Rose, 613
    Goosefoot, 344
    Hand or Aromatic Orchis, 33
    Hemp-nettle, 711
    Horned Poppy, 645
    Mailkes, 647
    Maithes, 676
    -necked Thread Moss, 1033
    Robin, 499
    -rot, 410
    -shanks, 309
    Shrubby Spurge, 589
Red-stemmed Polypody, 1001
    Valerian, 89
    Whortle-berry, 479
    Willow, 58
Reddish Shining Feather Moss, 10
Reed, 196
    Canary Grass, 143
    Fescue-grass, 185
    Mace, 140
Reedy Meadow-grass, 165
Reflexed Jungermannia, 1095
    Meadow-grass, 166
Remote Seg, 117
Rest-harrow, 833
    -plough, 833
Reticulated Thread Moss, 1039
Revolving Fringe Moss, 1024
Ribbon-grass, 143
Rib-grass, 232
Ribwort Plaintain, 232
Rigid Carex, 134
    Three-branched Polypody, 10
    Thread Moss, 1058
Roan-tree, 606
Roebuck Berries, 629
Roman Nettle, 239
Rock Currant, 334
    Dittander, 757
    -rose, 661
    Samphire, 374
    Scorpion-grass, 278
    Stonecrop, 560
Rocket, 583, 787
Rose, 610
Rosebay, 298
    Willow-herb, 469
Rosemary-leaved Willow, 71
    -root, 510
    Willow, 56
Rough Althæa, 808
    -bordered Hawk-weed, 895
    -caps, 161
    Cat's-tail Grass, 147
    Chervil, 388
    Cicely, 389
    Cock's-foot Grass, 176
    Dandelion, 890
    Dog's-tail Grass, 179
    -fruited Corn Bedstraw, 225
    Heath Bedstraw, 222
    Marsh Bedstraw, 223
    Panick Grass, 144
    -podded Purple Vetch, 846
    Tare, 847

Rough-podded Vetchling, 839
Single-fringed Thread Moss, 1030
-podded Yellow Vetch, 845
Spleenwort, 985
-stalked Meadow-grass, 169
Trefoil, 856
Round-eared Sallow, 72
-fruited Rush, 442
Seg, 133
-headed Cotton-grass, 100
Club-grass, 103
Garlic, 421
Rampion, 306
-leaved Bell-flower, 301
Crane's-bill, 806
Feather Moss, 1061
Mint, 699
Snap-dragon, 733
Sundew, 410
Winter-green, 523
Rough-headed Poppy, 646
-stalked Marsh Willow-herb, 472
Royal Moonwort, 982
Bracheus, 982
Polypody, 993
Rue-weed, 674
-leaved Saxifrage, 533
Whitlow-grass, 533
Rupture-wort, 342
Rush, 438
Russet Carex, 132
Rye Grass, 199

S

Saffron Spiderwort, 432
Crocus, 94
Sage, 26
of Jerusalem, 282
Saint Barnaby's Thistle, 962
foin, 849
James's-wort, 938
John's-wort, 870
Salfern, 279
Sallow, 72
-thorn, 242
Salt-marsh Club-grass, 105
wort, 5, 340, 352
Samphire, 5, 374
-leaved Elecampane, 946
Sand Garlic, 422
Mustard, 788
Sandwort, 551
Sanicle, 363
Satyrion, 33
Sauce-alone, 775
Savin-leaved Club Moss, 979
Saw-leaved Hairy Cinque-foil, 635
-wort, 907
Saxifrage, 527
Anise, 396
Scabious, 217, 311
Scaly-stalked Club-rush, 101
Spleenwort, 987
-stemmed Polypody, 999
Water Moss, 1009
Scarlet Pimpernel, 296
Scentless Mayweed, 952
Schreberian Feather Moss, 1078
Scheuchzeria, 459
Scorched Alpine Carex, 132
Scored-leaved Feather Moss, 1066
Scorpion-grass, 276
Feather Moss, 1072
Scotch Fir, 817
Scottish Asphodel, 459
Lovage, 376
Menziesia, 480
Primrose, 291
Scurvy-grass, 300
Scull-cap, 724
Scurvy-grass, 761
Sea Beet, 352
Bent-grass, 157
Bindweed, 300
Buckthorn, 242
Cabbage, 784
Campion, 544
Cat's-tail Grass, 146
Chamomile, 955
Colewort, 751, 784
Cotton-weed, 920
Darnel, 180
Eryngo, 361
Feverfew, 952
Gilliflower, 405
Goosefoot, 347
-grass, 5
Hard-grass, 201
Heath, 452
Holly, 361
Kale, 751
Lavender, 406
Mat-weed, 198
Milkwort, 340
-Parsley, 376
Pea, 835

Sea Pearl-wort, 261
  Plaptain, 233
  Purslane, 347
  Radish, 789
  Reed, 198
  Rocket, 751
  Samphire, 374
  Sandwort, 551
  Southernwood, 922
  Spleenwort, 988
  Spurge, 587
  Spurrey, 554
  Starwort, 940
  Stock, 778
  Stork's-bill, 799
  Sulphur-wort, 373
  Tassel-grass, 260
  Tree-Mallow, 811
  -weed, 969
  Wheat, 207
    -grass, 205
  -side Arrow-grass, 460
    Barley-grass, 205
    Seg, 118
Seaves, 440
Seggram, 938
Seg, 114
Sengreen, 526, 560
Self-heal, 725
Septfoil, 636
Serrated Earth Moss, 1006
    Winter-green, 425
Service Tree, 604
Sessile-bearded Thread Moss, 1029
  -fruited Oak, 503
Setterwort, 686
Shaggy Alpine Hawk-weed, 899
Shamrock, 854
Sharp Dock, 454
  Fern-like Feather Moss, 1059
  -flowered Jointed Rush, 445
  -leaved Triandrous Willow, 59
    Dwarf Earth Moss, 1005
  -pointed Blite, 344
    Fluellin, 734
  -toothed Jungermannia, 1089
Sheave Grass, 976
Sheathing Thread Moss, 1045
Sheep's-bit, 311
  Fescue-grass, 182
  Scabious, 311
  Sorrel, 458
Shell-leaved Jungermannia, 1091
Shepherd's Cress, 766
    Needle, 387
    purse, 760
    Staff, 217
    Weather-glass, 296
Shining Crane's Bill, 805
  Dark-green Willow, 63
  Feather Moss, 1062
  -fruited Jointed Rush, 446
  Hair-like Feather Moss, 1068
  Pond-weed, 257
  Tamarisk Feather Moss, 1069
Short Bluish Meadow-grass, 167
  -leaved Thread Moss, 1048
  -beaked Water Feather Moss, 1077
Shoreweed, 220
Shrubby Cinquefoil, 632
  Hawkweed, 895
  Orache, 347
  Saltwort, 352
  Samphire, 5
Shunis, 376
Sibthorpia, 742
Sibbaldia, 410
Silk-wood, 515
Silky Bent Grass, 154
  Heath Fringe Moss, 1021
  -leaved Osier, 79
  Pendulous Thread Moss, 105
  Rock Sallow, 78
  Sand Willow, 69
Silver Hair-grass, 163
  -weed, 633
Silvery Alpine Jungermannia, 1096
  Cinquefoil, 634
  Thread Moss, 1055
Simple Fringe Moss, 1027
  -leaved Ash, 80
Simpler's Joy, 697
Simson, 935
Single-flowered Winter-green, 426
  -fruited Targionia, 1098
  -headed Thistle, 914
  -husked Fescue-grass, 180
Skerret, 378
Slender Bird's-foot Trefoil, 865
  -branched Thread Moss, 101
  Club-rush, 106
  -eared Broad-leaved Cyperus-grass, 124
  Feather Moss, 1075

Slender-flowered Thistle, 910
    Fox-tail Grass, 150
    Gland Moss, 1014
    Hare's-ear, 363
    -leaved Carex, 124
    Mountain Cotton-grass, 101
    -stemmed Polypody, 997
    Spiked Seg, 137
    Spreading Rush, 443
    Wood Brome-grass, 191
    Yellow Trefoil, 861
Slippery Jungermannia, 1084
Sloe-tree, 595
Smallage, 397
Small Bindweed, 299
    Bugloss, 286
    Corn Campion, 542
    Elecampane, 946
    -flowered Cow-wheat, 730
        Crane's-bill, 803
        Crowfoot, 681
        Fumitory, 824
        Hawk's-beard, 902
        Hoary Willow-herb, 470
        Pearl-wort, 262
    Garden Blite, 208
    Hart-wort, 365
    Henbit, 21
    Pond-weed, 260
    Quaking-grass, 175
    Quilled Feather Moss, 1068
    Reed, 198
    Scabious, 218
    Seg, 114
    Teasel, 217
    -toothed Hawkweed, 895
    Valerian, 89
    Water Plantain, 465
    Waterwort, 502
Smallest Close Reed, 198
    Fluellin, 15
Smoke-wood, 674
Smooth Alpine Hair-grass, 161
    Brome-grass, 188
    Cat's-ear, 903
    Chervil, 389
    -fruited Corn Bed-straw, 228
    Heath Bed-straw, 222
    Mithridate Mustard, 759
    Naked Horse Tail, 945
    -podded Sea Vetch, 846
        Tare, 847
    Round-headed Trefoil, 855
    Rye Brome-grass. 187
Smooth Sea-heath, 452
    Speedwell, 18
    -stalked Beaked Carex, 136
        Meadow-grass, 166
    Stonewort, 34
    Tower Mustard, 782
    Willow, 59
Snail-shell Medick, 867
Snail's-horns, 867
Snakeweed, 494, 497
Snake's-head, 425
Snap-dragon, 733
Sneeze-wort Yarrow, 9[illegible]7
Snow-ball-tree, 399
    drop, [illegible]18
    flake, 419
Soapwort, 537
Soft Brome-grass, 188
    Brown Carex, 119
    Crane's-bill, 804
    Feather Moss, 1076
    Grass, 159
    -knotted Trefoil, 856
    -leaved Round-fruited Rose, 613
    -leaved Hawkweed, 899
    Millet, 153
    Rush, 440
    Ribbed-leaved Feather Moss, 1079
    Seg, 119
Solid Bulbous Fumitory, 823
Solomon's Seal, 435
Sorb, 604, 605
Sorrel, 458
    Dock, 458
Sow-bane, 344
    -bread, 294
    -ruck, 458
    -thistle, 882,
Sour Trefoil, 561
Southern Elm, 353
Southernwood, 922
Spatling Poppy, 544
Spanish Catchfly, 542
    Chesnut Tree, 581
Spear-grass, 159
    Mint, 700
    Orache, 348
    Thistle, 910
    -wort, 678
Speedwell, 15
    Chickweed, 16
    -leaved Whitlow-grass, 756
Sperage, 433

Spider Ophrys, 44
Spiderwort, 432
Spignel, 372, 393
    Cicely, 393
Spindle Tree, 325
Spiræa, 608
Spikenard, 930
  -rush, 105
Spiked Bethlehem-star, 427
    Brome-grass, 192
    Fescue-grass, 186
    Seg, 120
    Water Milfoil, 511
    Wood-rush, 449
Spleenwort Polypody, 998
    Jungermannia, 1085
Spoonwort, 763
Spotted Cat's-ear, 902
    -flowered Cistus, 659
    Hand Orchis, 32
    Horn-flower, 1102
    Lungwort, 283
    Snakeweed, 496
Spotless Silky Feather Moss, 1078
Spreading Bell-flower, 302
    Bird's-foot Trefoil, 864
    Halberd-leaved Orache, 348
    Hedge Parsley, 366
    Millet Grass, 153
    Narrow-leaved Orache, 348
Spring Cinquefoil, 635
    Gentian, 359
    -grass, 82
    Saffron, 94
    Vetch, 845
    Violet, 359
Spurge, 585
    Flax, 589
    Laurel, 490
    Olive, 489
Spurless Coral-root, 37
Spurrey, 567
Spurt-grass
Spur-wort, [illegible]
Square-sta[illegible]ohn's-wort, 870
    [illegible]ow-herb, 471
Squill, 428
Squinancy Berry, 335
Squirrel-tail Grass, 204
    Feather Moss, 1063
Squitch, 206
Stagger-wort, 938
Stained-leaved Hawkweed, 896
Stanch, 834
Starch Hyacinth, 431
    -wort, 670
Starre, 198, 202
Star Thread Moss, 1041
Star-grass, 7
  -headed Marchantia, 1099
      Thrumwort, 464
      Water Chickweed, 7
  Knap-weed, 961
  of the Earth, 234
  Thistle, 961
  -tip, 1083
  wort, 940
Starry-headed Trefoil, 860
  Saxifrage, 528
Starved Wood Carex, 129
Stellated Thread Moss, 1032
Stemless Thread Moss, 1037
Stitchwort, 547
Stock, 778
Stone Brakes, 984
  Bramble, 629
  crop, 557
  Parsley, 372
  wort, 2
Stork's-bill, 797
Straight-leaved Thread Moss, 1029
Strangle Tare, 743, 847
    Vetch, 845
Strapwort, 404
Strawberry, 630
    -flowered Cinquefoil, 633
    -headed Trefoil, 861
    -tree, 521
Straw-like Feather Moss, 1075
Streaked Field Garlic, 423
Striated Feather Moss, 1065
Striped Bloody Crane's-bill, 801
Subterraneous Trefoil, 855
Succory, 905
    Hawk's-beard, 901
Suffocated Trefoil, 862
Suffolk Grass, 169
Sulphur-coloured Trefoil, 859
    -wort, 373, 384
Summer Fringe Moss, 1025
    Snowflake, 419
Sundew, 410
Sun Spurge, 588
Swallow-wort, 643
Swan's Neck Fringe Moss, 1025
Sweet Alyssum, 756

- Sweet Briar, 616
  - Chamomile, 955
  - Cicely, 390
  - Cyperus, 107
  - Fern, 390
  - Gale, 250
  - Milk Vetch, 850
  - -scented Flag, 437
    - Moss, 1085
    - Vernal-grass, 82
  - Woodruff, 220
- Swine's Cress, 764, 938
  - Succory, 904
- Sword-leaved Helleborine, 47
- Sycamore Tree, 474

- Tall Bristly Rose, 614
  - Broom-rape, 744
  - Fescue-grass, 181, 184
  - Marsh Sow-thistle, 883
  - Oat-grass, 193
  - Red Mint, 704
- Tamarisk, 403
  - Jungermannia, 1093
- Tansy, 921
- Taper Field Brome-grass, 191
- Tare, 843
  - Everlasting, 839
- Tassel Pond-weed, 260
- Tawny Rush-grass, 108
  - Seg, 126
  - -seeded Cicely, 390
- Tea-leaved Willow, 63
- Teasel, 215
  - -headed Trefoil, 860
- Tent-wort, 989
- Thicket Rose, 619
- Thick-leaved White Stonecrop, 559
  - Shining Blite, 346
- Thin-leaved Willow, 66
- Thistle, 908
- Thorn-apple, 315
- Thorny Rest-harrow, 833
- Thorough-wax, 363
- Thousand-leaved Grass, 957
- Thread-leaved Feather Moss, 1077
- Three-branched Polypody, 1001
  - Yellow Feather Moss, 1077
- Three-cleft Polypody, 1000
  - -faces-under-a-hood, 330
  - -flowered Goose-grass, 225
- Three-flowered Rush, 445
  - -jointed Lyme-grass, 202
  - -leaved Rush, 441
  - -lobed Jungermannia, 1091
  - -rowed Thread Moss, 1044
  - -toothed Cinquefoil, 634
- Thrift, 405
- Throat-wort, 303
- Thrumwort, 464, 465
- Thyme, 719
  - -leaved Flax-seed, 263
    - Sandwort, 552
- Timothy Grass, 147
- Toad-flax, 341, 734
  - Rush, 443
- Tongue-leaved Gland Moss, 1014
- Toothwort, 731, 766
- Toothed Polypody, 997
  - Hoary Thread Moss, 1038
- Tormentil, 636
- Touch-me-not, 332
- Tower Turkey-pod, 781
  - Wall Cress, 781
- Trailing Catchweed, 285
  - Hairy Scorpion-grass, 277
  - Rosebay, 298
  - St. John's-wort, 873
  - Sallow, 72
  - Tormentil, 637
- Traveller's Joy, 673
- Treacle Worm-seed, 775
- Tree Primrose, 473
  - -shaped Feather Moss, 1074
- Trefoil, 851
  - Buckbean, 293
  - Medick, 867
- Trembling Poplar, 487
- Triandrous Willow, 59
- Triangular Club-rush, 10
- Trifid Double-tooth, 918
  - Speedwell, 21
- Triple Twayblade, 38
- True Maiden Hair, 1002
- True Service Tree, 605
- Tube-root, 461
- Tuberous Bitter Vetch, 887
  - Moschatel, 501
  - -rooted Saxifrage, 531
    - Comfrey, 284
  - Thistle, 911
- Tufted Alpine Saxifrage, 534
  - Bog Carex, 134
  - Horse-shoe Vetch, 848
  - Loosestrife, 295
  - Vetch, 842

Tufted Water Scorpion-grass, 277
Tulip, 426
Tumid Thread Moss, 1050
Tunbridge Goldilocks, 1003
Turfy Hair-grass, 160
Turk's-cap Lily, 452
Turkey Pod, 779
Turnip, 783
Tutsan, 869
Twayblade, 36
Twisted-leaved Thread Moss, 1034
  -podded Whitlow-grass, 756
  Thread Moss, 1047
Two-flowered Linnæa, 741
  Rush, 444
Two-leaved Squill, 429

U

Umbelliferous Jagged Chickweed, 210
Unarmed Hornwort, 573
Unbranched Bur-reed, 141
Undulated Fringe Moss, 1026
Upland Groundsel, 936
Upright Annual Brome-grass, 189
  Bed-straw, 224
  Chickweed, 21
  Cudweed, 928
  -fruited Dioecious Carex, 114
  Goosefoot, 343
  Goose-grass, 224
  Hooked Feather Moss, 1073
  Meadow Crowfoot, 681
  Perennial Brome-grass, 189
  St. John's-wort, 875
  Sea Lyme-grass, 202
    -side Seg, 118
  Spear-leaved Orache, 340
  Spiked Speedwell, 15
  Warty Spurge, 588
Urn-bearing Hair Moss, 1018

Valerian, 89
Variable Jungermannia, 1095
Variegated Catchfly, 543
  Mint, 705
Various-leaved Pond-weed, 256
Varnished Willow, 61
Veiny-leaved Willow, 67
Velvet-leaf, 811
  Feather Moss, 1081
  Osier, 79
Ventricose Bog Fringe Moss, 1028
Venus's Comb, 387
Vernal Carex, 124
  Crocus, 94
  Sandwort, 552
  Speedwell, 16
  Squill, 429
  Star-grass, 7
Verticillate Solomon's Seal, 435
Vervain, 697
Vetch, 834, 841
Violet, 326
  Horned Poppy, 645
Viper's Bugloss, 286
  -grass, 286
Virgin's Bower, 673
Viviparous Snakeweed, 498

W

Wake Robin, 670
Wall Barley-grass, 204
  Bedstraw, 226
  Cress, 779
  Fescue-grass, 180
  Feather Moss, 1076
  -flower, 776
  Germander, 694
  Hawkweed, 897
  Lettuce, 887
  Pennywort, 556
  Pepper, 558
  Rocket, 787
  Rue, 989
  Speedwell, 16
  Thread Moss, 1031
Wart-wort, 588
Warty-fruited Bedstraw, 228
Water Agrimony, 919
  Aloe, 668
  Avens, 638
  Awlwort, 754
  Bedstraw, 221, 225
  Betony, 759
  -can, 652
  Cow-bane, 285
  -cress, 771

Water Elder, 400
Fennel, 7
Flag, 96
Germander, 695
Gladiole, 515
Groundsel, 939
Hair-grass, 160
Hemp, 918
Honewort, 381
Horehound, 25
Lily, 292, 652
Meadow-grass, 165
Milfoil, 24 511
Parsnip, 378
Pepper, 495
Pimpernel, 308
Plantain, 464
Purslane, 452
Rocket, 771
Rose, 652
Sallow, 73
Speedwell, 19
Starwort, 7
Trefoil, 293
Violet, 293
-wort, 522
Yarrow, 293
Waved-leafed Thread Moss, 1035
Feather Moss, 1066
Way Bennet, 204
-bread, 230
-faring-tree, 398
Thistle, 911
Wavy Hair-grass, 161
-leaved Jungermannia, 1089
Thread Moss, 1053
Wedge-leafed Thread Moss, 1080
Weeping Ash, 81
Birch, 247
Welsh Bistort, 498
Golden-rod, 942
Rock Stonecrop,
Sorrel, 453
Speedwell, 15
Weld, 583
Wheat-Grass, 205
White Archangel, 708
Beak-rush, 109
-beam Tree, 608
Campion, 563
Climbing Fumitory, 825
Couch,
Darnel,
Fringe Moss, 1022
White-flowered Stonecrop, 558
Goosefoot, 345
Helleborine, 47
Henbane, 317
Horehound, 717
Ladies' Bedstraw, 221
White-leaf Tree, 608
Maiden Hair, 989
Mountain Cistus, 661
Mullein, 312
Ox-eye, 950
Poplar, 486
Poppy, 648
Rot, 362, 556
Satyrion, 35
Saxifrage, 531
Seg, 116
Thorn, 597
Trailing Dog Rose, 611
Trefoil, 854
Water Lily, 652
Welsh Willow, 61
Wild Pear Tree, 608
Willow, 77
Whitening Jungermannia, 1090
Whitish Silky Feather Moss, 1066
Whitlow-grass, 755
Whorled Honewort, 381
Thread Moss, 1030
Milfoil, 512
Whortle-berry, 478, 479
Wild Angelica, 378
Basil, 718
Briar, 617
Burnet, 235
Carnation, 539
Carrot, 368
Celery, 397
Chamomile, 953
Cherry Tree, 593
English Clary, 26
Garlic, 423
Germander, 20
Hyacinth, 430
Navew, 782
Oat-grass, 180
Plum Tree, 594
Rocket, 787
Rosemary, 521
Rye, 204
Spinach, 343
Tansy, 633
Teasel, 216
Thyme, 719

Wild Vine, 92
Woad, 584
Wilding, 602
Willow, 51
-herb, 469
-leaved Spiræa, 609
-weed, 496
Wing-cleft Anthoceros, 1103
Thread Moss, 1039
Winged Bladder-nut, 402
-stalked Goldilocks, 1003
Winter-cress, 774
-green, 466, 623
Marjoram, 719
-weed, 21
Witchen, 606
Witch's-thimble, 301
Withered-pointed Sallow, 79
Woad, 752
Wolf's Claw, 977
Woodbine, 309
Woodruff, 220
Wood Anemone, 672
Betony, 714
Bitter Vetch, 836
Club Rush, 104
Crane's Bill, 802
Crowfoot, 680
Feather Moss, 1060
Hawkweed, 898
Horse-tail, 973
Jungermannia, 1090
Laurel, 490
Loose-strife, 295
Lyme-grass, 203
Meadow-grass, 171
Melic Grass, 164
Peasling, 836
Polypody, 994
Reed, 197
Rush, 447
Sanicle, 363
Scorpion-grass, 277
Sorrel, 561
Spurge, 590
Stitchwort, 547
Strawberry, 631
-waxen, 829
Vetch, 841
Woody Nightshade, 319
Woolly Broad-leaved Willow, 74
-headed Thistle, 913
Yellow Milfoil, 558
Wolf's-bane, 665
Worm-seed, 772
wood, 923
Woundwort, 714, 942
Wreathed Pipe-wort, 219
Wrinkled Willow, 68
Wych Elm, 355
Hasel, 357, 574
Wymote, 807

Yarrow, 956, 957
Yellow Archangel, 713
and Blue Scorpion-grass, 278
Bethlehem-star, 427
Bird's-nest, 519
Bottle, 950
Bugle, 693
Centaury, 477
Cow-wheat, 730
Devil's-bit, 889
Fig-wort, 739
Fumitory, 823
Goat's-beard, 880
Goose-grass, 226
Gowans, 950
Horned Poppy, 644
Ladies' Bedstraw, 226
Loosestrife, 294
Marsh Dock, 457
Saxifrage, 530
Meadow Vetchling, 839
Mountain Saxifrage, 531
Musk Ophrys, 41
Oat-grass, 195
Ox-eye, 950, 956
Pansy, 331
Pimpernel, 295
Poppy, 652
Rattle, 727
Rocket, 774
Rose-wort, 510
Starry Feather Moss, 1062
Seg, 125
Sickle Medick, 866
Star Thistle, 962
Stonecrop, 560
Suckling, 861
Toad-flax, 736
Vetchling, 888
Viscid Bartsia, 726
Water Iris, 96

Yellow Water-lily, 654
 Weld, 583
 Willow, 64
 Wolf's Claw Feather Moss, 1071
 Wood Anemone, 672
 Sorrel, 562
Yellowish Mountain Milk, 851
 Thread Moss, 1048
 Feather Moss, 1065
 Vetch, 851
Yew Tree, 811
Yew-leaved Feather Moss, 1061
Yorkshire Sanicle, 22

Z

Zierian Thread Moss, 1055
Zigzag Bog Moss, 1005
 Ladies-smock, 768
 Meadow-grass, 168
 Trefoil, 857

LATIN INDEX

TO THE

SECOND AND THIRD VOLUMES,

INCLUDING SUCH PARASYTIC FUNGI AS ARE INTRODUCED IN THE NOTES.

GENERIC names in Capitals.
SPECIFIC names in Roman print.
SYNONYMS in Italic.

Aceras anthropophora, 9
    anthropophora, 9
ACER, 474
    campestre, 475
    pseudo-platanus, 474
Acetosa rotundifol. &c. 453
ACHILLÆA, 956
Millefol. luteum, 958
    millefolium, 957
    ptarmica, 956
    serrata, 957
    tomentosa, 958
ACONITUM, 665
    napellus, 665
ACORUS, 436
    calamus, 436
Acrostichum Ilvense, 994
    septentrionale, 989
    spicant, 985
    Thelypteris, 996
ACTÆA, 642
    spicata, 642
ADIANTUM, 1002
Capillus-Veneris, 1002
ADONIS, 676
    æstivalis, 677
    autumnalis, 676
ADOXA, 501
    moschatellina, 501
Æcidium Berberidis, 451
    cancellatum, 602
    cornutum, 607
    Euphorbiæ, 586
    Ficariæ, 678
    laceratum, 598
    Rumicis, 454
    Thalictri, 674
    Tussilaginis, 934
    Urticæ, 239
Ægilops incurvata, 201
ÆGOPODIUM, 397
    podagraria, 398
ÆTHUSA, 386
    cynapium, 386
Æthusa Meum, 398
AGRIMONIA, 575
    Eupatoria, 575
AGROSTEMMA, 562
    githago, 562
AGROSTIS, 153
    alba, 156
    alpina, 155
    aristata, 157
    canina, 154

- AGROSTIS
  - *canina*, 156
  - *linearis*, 146
  - littoralis, 152
  - *littoralis*, 152
  - *minima*, 152
  - pallida, 155
  - palustris, 155
  - *panacea*, 152
  - *pumila*, 156
  - setacea, 155
  - spica-venti, 154
  - *stolonifera*, 157
  - *stolonif. latif.*, 157
  - *sylvatica*, 157
  - *vinealis*, 154
  - vulgaris, 156
  - *vulgaris sylv.*, 156
- AIRA, 160
  - alpina, 161
  - aquatica, 160
  - *aquat. dist.*, 166
  - *cærulea*, 164
  - cæspitosa, 160
  - canescens, 162
  - caryophyllea, 162
  - *cristata*, 171
  - flexuosa, 161
  - *lævigata*, 161
  - *montana*, 161
  - præcox, 162
  - *varia*, 165
- AJUGA, 692
  - alpina, 692
  - chamæpitys, 693
  - *Genevensis*, 693
  - pyramidalis, 692
  - *pyramidalis*, 693
  - reptans, 693
- ALCHEMILLA, 243
  - alpina, 243
  - arvensis, 244
  - vulgaris, 243
- ALISMA, 463
  - Plantago, 463
  - Ranunculoides, 465
  - *repens*, 465
- ALLIUM, 421
  - ampeloprasum, 421
  - arenarium, 421
  - carinatum, 422
  - oleraceum, 423
  - schœnoprasum, 424
  - ursinum, 423
- ALLIUM
  - vineale, 422
- ALNUS, 245
  - glutinosa, 245
- ALOPECURUS, 148
  - agrestis 149
  - alpinus, 149
  - bulbosus, 150
  - fulvus, 151
  - geniculatus, 150
  - *geniculatus*, 151
  - *monspeliensis*, 152
  - pratensis, 148
  - *ventricosus*, 153
- *Alsine longifol. &c.* 550
  - *media*, 548
  - *rubella*, 553
- ALTHÆA, 807
  - officinalis, 807
  - hirsuta, 808
- *Althæa*, 807
- ALYSSUM, 750
  - maritimum, 790, 750
  - *minimum*, 750
  - *sativum*, 750
- AMARANTHUS, 208
  - blitum, 208
- ANAGALLIS, 296
  - arvensis, 296
  - *cærulea*, 296
  - tenella, 297
- ANDROMEDA, 520
  - *cærulea*, 480
  - Daboecia, 481
  - polifolia, 520
  - *taxifolia*, 480
- ANEMONE, 670
  - apennina, 673
  - nemorosa, 671
  - *pratensis*, 671
  - pulsatilla, 671
  - Ranunculoides, 672
- ANCHUSA, 280
  - officinalis, 280
  - sempervirens, 280
- ANGELICA, 377
  - archangelica, 377
  - sylvestris, 378
- *Anomodon curtipendulum*, 1078
  - *viticulosum*, 1064
- ANTHEMIS, 953
  - arvensis, 953

- ANTHEMIS
  - Cotula, 954
  - maritima, 955
  - tinctoria, 956
- ANTHERICUM, 431
  - *calyculatum*, 459
  - *ossifragum*, 432
  - serotinum, 431
- ANTHOCEROS, 1102
  - lævis, 1102
  - *major*, 1103
  - multifidus, 1103
  - punctatus, 1102
- ANTHOXANTHUM, 82
  - odoratum, 82
- ANTHRISCUS, 387
  - vulgaris, 387
- ANTHYLLIS, 834
  - vulneraria, 834
- ANTIRRHINUM, 732
  - arvense, 735
  - cymbalaria, 733
  - elatine, 734
  - Linaria, 735
  - majus, 736
  - minus, 735
  - *Monspessulanum*, 734
  - Orontium, 736
  - repens, 734
  - spurium, 733
- *Apargia autumnalis*, 889
  - *hispida*, 890
  - *Taraxaci*, 893
- *Aparine minima*, 226
- *Aphanes arvensis*, 244
- APIUM, 397
  - graveolens, 397
  - Petroselinum, 397
- AQUILEGIA, 666
  - *alpina*, 667
  - vulgaris, 666
- ARABIS, 779, 791
  - *arenosa*, 780
  - ciliata, 780, 791
  - hispida, 780, 791
  - hirsuta, 781, 791
  - stricta, 779, 791
  - Thaliana, 779, 791
  - turrita, 780, 791
- ARBUTUS, 521
  - alpina, 522
  - unedo, 521
  - uva ursi, 522
- ARCTIUM, 905
  - *Bardana*, 906
  - Lappa, 905
  - *Lappa* β, 906
- ARENARIA, 551
  - ciliata, 544
  - fastigiata, 553
  - *fasciculata*, 554
  - *Juniperina*, 552
  - *Laricifolia*, 552
  - marina, 554
  - media, 552
  - *multicaulis*, 554
  - peploides, 551
  - rubella, 553
  - rubra, 554
  - *rubra* β, 554
  - serpyllifolla, 551
  - tenuifolia, 553
  - trinervis, 551
  - verna, 552
- ARISTOLOCHIA, 462
  - clematitis, 462
- *Arresta bovis*, 833
- ARTEMISIA, 921
  - Absinthium, 923
  - campestris, 921
  - cærulescens, 924
  - *Gallica*, 922
  - maritima, 922
  - vulgaris, 923
- ARUM, 669
  - maculatum, 669
- ARUNDO, 196
  - *Arundo*, 164
  - arenaria, 198
  - calamagrostis, 197
  - *calamagrostis*, 197
  - *colorata*, 143
  - epigejos, 197
  - *Lobelii*, 164
  - *neglecta*, 198
  - *nutans*, 164
  - phragmites, 196
  - stricta, 198
  - uniflora, 164
- ASARUM, 572
  - Europæum, 572
- ASPARAGUS, 432
  - officinalis, 432
- ASPERUGO, 285
  - procumbens, 285

ASPERULA, 220
cynanchica, 220
odorata, 220
Asphodelus Lanc. var., 459
lanceolata, 463
Lancastriæ, 432
ASTER, 940
fragilis, 941
Tripolium, 940
Aspidium aculeatum, 998
cristatum, 997
dentatum, 997
dilatatum, 999
Filix-fœmina, 999
Filix-mas, 995
fontanum, 997
fragile, 1000
irriguum, 999
lobatum, 998
Lonchitis, 993
Oreopteris, 995
regium, 1000
rhæticum, 1001
spinulosum, 998
Thelypteris, 997
ASPLENIUM, 985
Adiantum-nigrum, 990
alpinum, 994
alternifolium, 989
Ceterach, 986
fontanum, 997
Germanicum, 989
lanceolatum, 990
marinum, 988
Ruta-muraria, 989
Scolopendrium, 985
septentrionale, 988
Trichomanes, 987
Trichomanes γ, 988 ; / 988
viride, 987
ramosum, 988
ATHAMANTA, 372
libanotis, 373
Meum, 393
oreoselinum, 372
Athanasia maritima, 920
ASTRAGALUS, 849
campestris, 851
Danicus, 850
glycyphyllos, 850
hypoglottis, 849
uralensis, 851
uralensis, 851
ATRIPLEX, 347
angustifolia, 348
erecta, 349
hastata, 348
laciniata, 347
littoralis, 349
marina, 349
patula, 348, 349
patula, var., 349
pedunculata, 349
portulacoides, 347
valv. sem. integr., 349
ATROPA, 317
belladonna, 317
Auricula muris, 891
AVENA, 192
elatior, 192
AZALEA, 298
procumbens, 298
BALLOTA, 716
nigra, 716
BARBAREA, 774
Barbarea, 774
præcox, 774, 791
vulgaris, 774, 791
Barbula brevifolia, 1048
convoluta, 1035
fallax, 1050
gracilis, 1048
rigida, 1033
ruralis, 1052
tortuosa, 1047
unguiculata, 1047
Bartramia arcuata, 1023
fontana, 1020
Halleriana, 1042
marchica, 1020
pomiformis, 1040
BARTSIA, 726
alpina, 726
odontites, 726
viscosa, 726
BELLIS, 947
perennis, 947
BERBERIS, 450
vulgaris, 450
Berkeleya fragilis, 669
BETA, 351
maritima, 351
BETONICA, 713
officinalis, 713

BETULA, 246
 alba, 246
 Alnus, 245
 nana, 247
BIDENS, 917
 cernua, 917
 minima, 918
 tripartita, 918
BLASIA, 1100
 pusilla, 1100
BLECHNUM, 984
 boreale, 985
 spicant, 985
BORAGO, 284
 officinalis, 284
Botrychium, 982
Botrytis parasitica, 761
BRASSICA, 782
 campestris, 782, 792
 campestris perfol., 676
 Monensis, 784, 792
 muralis, 787
 Napus, 782, 792
 oleracea, 784, 792
 orientalis, 776
 Rapa, 783, 792
 Turrita, 776
BRIZA, 174
 media, 174
 minor, 174
BROMUS, 186
 arvensis, 190
 arvensis, 188, 189
 altissimus, 190
 asper, 190
 cristatus, 208
 diandrus, 189
 diandrus, 189
 erectus, 189
 gracilis, 191
 giganteus, 181
 hirsutus, 190
 littoreus, 184
 madritensis, 189
 mollis, 187
 montanus, 190
 multiflorus, 187
 muralis, 189
 nemoralis, 190
 pinnatus, 191
 polymorph. sec., 187
 polymorph. mol. 187
 pratensis, 188
BROMUS
 racemosus, 188
 ramosus, 190
 secalinus, 186
 squarrosus, 188
 sterilis. 190
 sylvaticus, 191
 sylvaticus, 190
 triflorus, 180
 velutinus, 187
BRYONIA, 92
 dioica, 92
BRYUM, 1028
 aciculare, 1019
 acutum, 1041
 æstivum, 1044
 æstivum, 1049
 alpinum, 1057
 androgynum, 1052
 annotinum, 1025
 annotinum, 1025
 apocarpum, 1029
 argenteum, 1054
 aureum, 1054
 barbatum, 1046
 bicolor, 1027
 bipartitum, 1023
 brevifolium, 1048
 bymum, 1028
 cæspiticium, 1067
 calcareum, 1032
 callistomum, 1037
 callistomum, 1021
 canescens, 1043
 capillaceum, 1048
 capillare, 1025
 carneum, 1053
 cerviculatum, 1032
 cirratum, 1042
 cirratum β, 1043
 convolutum, 1035
 crispatum, 1056
 crispum, 1045
 crudum, 1027
 cubitale, 1056
 cubitale, 1028
 cuneifolium, 1030
 curvatum, 1054
 curvirostrum, 1046
 Daviesii, 1051
 dealbatum, 1035
 delicatulum, 1053
 demissum, 105
 Dicksoni, 1044

BRYUM
elongatum, 1049
erythrocarpum, 1027
extinctorium, 1035
extinctorium β, 1036
ericetorum, 1047
fallax, 1050
fasciculare, 1034
fasciculatum, 1040
flagellare, 1048
flavescens, 1047
flexifolium, 1034
flexuosum, 1005
fontanum, 1020
Forsteri, 1034
glaucum, 1022
heteromallum, 1021
hornum, 1025
hygrometricum, 1024
hyperboreum, 1045
Hypnoides, 1037
Hypnoides, 1043
  β, 1043
  γ, 1046
  δ, 1039
imberbe, 1046
inclinatum, 1051
incurvum, 1017
lanceolatum, 1042
laterale, 1041
ligulatum, 1026
lineare, 1053
Linoides, 1042
Linoides, 1050
longifolium, 1050
lutescens, 1038
macrocarpon, 1040
marginatum, 1057
Mnioides, 1054
mucronulatum, 1047
murale, 1031
murale β, 1031
nutans, 1655
nigritum, 1056
obtusum, 1031
ovatum, 1031
paludosum, 1033
palustre, 1022
pallidum, 1037
parvulum, 1033
patens, 1040
paucifolium, 1034
pellucidum, 1022
pennatum, 1039
polyphyllum, 1043

BRYUM
pomiforme, 1040
pseudo-triquetrum, 1027
pulvinatum, 1056
punctatum, 1026
purpureum, 1023
pusillum, 1031
pyriforme, 1032
pyriforme, 1054
recurvatum, 1054
recurvirostrum, 1046
reticulatum, 1039
rigidum, 1033
roseum, 1027
rubrum, 1021
rufescens, 1021
rurale, 1052
scoparium, 1020
sericeum, 1055
serpyllifol. cuspid., 1024
  prolifer., 1027
  punct., 1026
  undulat., 1056
serratum, 1057
sessile, 1029
setaceum, 1035
simplex, 1021
Splachnoides, 1041
stellare, 1025
stellatum, 1032
stelligerum, 1041
stelligerum, 1044
striatum, 1030
striatum γ, 1029
  δ, 1045
strictum, 1023
strumiferum, 1050
subulatum, 1049
tectorum, 1030
tenue, 1023
tetragonum, 1051
tortuosum, 1047
Tozeri, 1053
Trichoides, 1020
trifarium, 1044
triquetrum, 1028
truncatulum, 1036
turbinatum, 1024
undulatum, 1052
unguiculatum, 1047
unguiculatum, 1046
vaginale, 1045
ventricosum, 1028
verticillatum, 1040
virens, 1039

BRYUM
viridissimum, 1034
viridulum, 1036
viridulum, 1058
Weissia, 1045
Zierii, 1055
BUFFONIA, 244
tenuifolia, 244
Bunias Cakile, 751
BUNIUM, 369
Bulbocastanum, 369
flexuosum, 369
BUPLEURUM, 363
odontites, 363
rotundifolia, 363
tenuissimum, 363
Bupthalmum, 953
BUTOMUS, 515
umbellatus, 515
BUXBAUMIA, 1010
aphylla, 1011
foliosa, 1010
BUXUS, 252
sempervirens, 252

C

CAKILE, 751
maritima, 751, 789
Calamagrostis arenaria, 198
epigejos, 198
lanceolata, 197
variegata, 143
CALAMENTHA, 723
fol. incano, 722
Calceoleus Mariæ, 48
CALENDULA, 962
arvensis, 962
CALLITRICHE, 6
aquatica, 7
autumnalis, 7
verna, 6
CALLUNA, 481
vulgaris, 481
CALTHA, 687
palustris, 687
radicans, 688
CAMELINA, 750
sativa, 750, 790
CAMPANULA, 30
glomerata, 304
hederacea, 365
hybrida, 306
latifolia, 303
patula, 301
persicifolia, 303
rapunculus, 202
rapunculoides, 304
rotundifolia, 301
Spec. Ven. minus, 306
trachelium, 304
Cannabis spur. fl. alb., &c., 712
CARUM, 394
Carui, 394
CAREX, 109
acuta, 136
acuta, 136, 137
ampullacea, 138
angustifolia, 139
arenaria, 118
arenaria, 119
atrata, 132
axillaris, 117
binervis, 127
brizoides, 116
cæspitosa, 135
cæspitosa, 134
canescens, 120
canescens, 116
capillaris, 128
cinerea, 116
clandestina, 123
compressus, 108
curta, 115
Davalliana, 114
depauperata, 128
digitata, 122
dioica, 113
distans, 126
distans, 127, 128
disticha, 119
divisa, 119
divulsa, 120
elegans, 131
elongata, 116
extensa, 126
filiformis, 124
flava, 125
flava, 126
fulva, 125
gracilis, 137
hirta, 138
hybrida, 139

CAREX
- incurva, 117
- inflata, 137
- intermedia, 118
- lævigata, 136
- *leporina*, 116
- limosa, 130
- Mielichoferi, 128
- *Micheliana*, 130
- muricata, 120
- *muricata*, 115, 120
- *Œderi*, 125
- ovalis, 116
- pallescens, 130
- paludosa, 136
- paniculata, 121
- panicea, 127
- *patula*, 115
- pauciflora, 115
- pendula, 123
- *phæostachya*, 128
- pilulifera, 132
- præcox, 124
- pseudo-cyperus, 131
- pulicaris, 114
- pulla, 132
- rariflora, 131
- recurva, 129
- remota, 116
- rigida, 133
- riparia, 135
- *rostrata*, 138
- rufus, 103
- *salina*, 128
- *secalina*, 139
- *speirostachya*, 128
- *spicata*, 120
- stellulata, 115
- *stenocarpa*, 139
- *straminea*, 116
- stricta, 134
- strigosa, 123
- sylvatica, 129
- *tenella*, 116
- teretiuscula, 121
- tomentosa, 133
- *tomentosa*, 124
- *uliginosa*, 108
- ustulata, 131
- vesicaria, 137
- *vesicaria*, 129, 138
- *ventricosa*, 129
- vulpina, 120
- *Witheringii*, 118

Caryophyll. Holost. arv., 566

CARDAMINE, 766
- amara, 770, 791
- *minor arvensis*, 768
- bellidifolia, 767
- bulbifera, 790
- *bulbifera*, 766
- flexuosa, 768
- *hastulata*, 780
- hirsuta, 767, 768, 791
- *hirsuta* β, 768
- impatiens, 767, 791
- *impatiens alt. hirsut.*, 768
- *parviflora*, 768
- *petræa*, 780
- pratensis, 768, 791
- *pumila Bellidis fol. alp.* 780

CARDUUS, 908
- arvensis, 911
- Acanthoides, 909
- *Acanthoides*, 910
- acaulis, 915
- *crispus*, 909
- Eriophorus, 913
- *Helenoides*, 915
- heterophyllus, 914
- lanceolatus, 910
- Marianus, 912
- nutans, 910
- pratensis, 914
- palustris, 968
- *polyacanthos*, 909
- tenuiflorus, 909
- tuberosus, 911
- *vulgat. viar.*, 914

CARPINUS, 574
- Betulus, 474

CASTANEA, 577
- Vesca, 580
- vulgaris, 581

CAUCALIS, 365
- *anthriscus*, 366
- daucoides, 365
- *Helvetica*, 366
- *infesta*, 366
- latifolia, 365
- *leptophylla*, 365
- *nodosa*, 367
- *scandicina*, 388

Cenangium (Peziza) ferruginosum 817

Cerasus sylv., &c., 594

CENTAUREA, 958
- Calcitrapa, 961
- Cyanus, 958
- Jacea, 959

CENTAUREA
  nigra, 960
  Scabiosa, 960
  solstitialis, 961
CENTUNCULUS, 234
  minimus, 234
CERASTIUM, 564
  alpinum, 563
  arvense, 566
  aquaticum, 567
  humile, 566
  latifolium, 565
  pumilum, 566
  semidecandrum, 566
  tetrandrum, 262
  umbellatum, 210
  viscosum, 564
  viscosum, 564
  vulgatum, 564
  vulgatum, 564
CERATOPHYLLUM, 257
  demersum, 572
  submersum, 573
CHÆROPHYLLUM, 388
  aromaticum, 390
  aureum, 390
  odoratum, 390
  sativum, 388
  sylvestre, 388
  temulum, 389
Chamæmelum lut. capit. aphyllo., 955
CHARA, 2
  flexilis, 3
  gracilis, 3
  hispida, 3
  hispida, 2
  nidifica, 5
  nidifica, 5
  tomentosa, 2
  translucens, 4
  vulgaris, 2
CHEIRANTHUS, 77
  Cheiri, 776
  Cheiri, 792
  fructiculosus, 776
  incanus, 778
  sinuatus, 777
CHELIDONIUM, 64
  corniculatum, 645
  Glaucium, 644
  hybridum, 645
  majus, 643
  violaceum, 645
CHENOPODIUM, 343
  acutifolium, 346
CHENOPODIUM
  album, 344
  Bonus-Henricus, 343
  botryoides, 344
  ficifolium, 345
  glaucum, 345
  hybridum, 345
  maritimum, 347
  murale, 346
  olidum, 346
  polyspermum, 346
  rubrum, 344
  urbicum, 343
  viride, 345
  vulvaria, 346
CHERLERIA, 555
  sedoides, 555
CHLORA, 477
  perfoliata, 477
CHRYSANTHEMUM, 949
  inodorum, 952
  leucanthemum, 949
  segetum, 950
CHRYSOCOMA, 919
  Linosyris, 919
CHRYSOSPLENIUM, 526
  alternifolium, 526
  oppositifolium, 527
CICHORIUM, 905
  Intybus, 905
CICUTA, 385
  virosa, 385
Cicuta, 370
Cinclidotus Fontinaloides, 1009
CIRCÆA, 13
  alpina, 14
  intermedia, 15
  lutetiana, 13
  racemosa, 14
Cirsium Anglicum, 914
  Brit Clus. repens, 915
  arvensis, 911
  acaulis, 915
CISTUS, 658
  anglicus, 658
  guttatus, 659
  Helianthemum, 660
  hirsutus, 658
  ledifolius, 659
  marifolius, 658
  polifolius, 661
  salicifolius, 660
  Surreianus, 660

CISTUS
  tomentosus, 661
CINERARIA, 943
  alpina, 944
  alpina γ integrifol., 944
  campestris, 944
  integrifolia, 943
  integrifol. β palust., 944
  maritima, 944
  palustris, 943
CLADIUM, 81
  mariscus, 81
Clavaria compressa, 239
CLEMATIS, 673
  vitalba, 673
Cleuthospora phacidioides, 255
CLINOPODIUM, 718
  vulgare, 718
Cnicus acaulis, 915
  Eriophorus, 913
  heterophyllus, 914, 915
  lanceolatus, 910
  palustris, 908
  pratensis, 914
  tuberosus, 911
CNIDIUM, 373
  silaus, 373
COCHLEARIA, 761
  Anglica, 765, 790
  Armoracia, 763, 790
  Coronopus, 764, 789
  Danica, 762, 790
  Groenlandica, 761, 762
  officinalis, 761, 790
COLCHICUM, 461
  autumnale, 461
COMARUM, 639
  palustre, 639
Conferva nana, 1008
  Zostericola, 669
CONIUM, 370
  maculatum, 370
CONVALLARIA, 433
  majalis, 433
  multiflora, 435
  polygonatum, 435
  verticillata, 435
CONVOLVULUS, 298
  arvensis, 298
  sepium, 299
  soldanella, 299
CONYZA, 930
  squarrosa, 930
Corallorrhiza innata, 10
  innata, 37
Coreopsis Bidens, 918
CORYANDRUM, 386
  sativum, 386
CORNUS, 236
  herbácea, 237
  sanguinea, 236
  Suecica, 236
  Virga sanguinea, 236
CORONOPUS, 764
  didyma, 765, 789
  Ruellii, 764, 789
Conostomum boreale, 1051
CORRIGIOLA, 403
  littoralis, 403
Corydalis claviculata, 825
CORYLUS, 491
  Avellana, 491
Cotula alba, 953
  non fœtida, 953
COTYLEDON, 555
  lutea, 556
  umbilicus, 555
Cotoneaster vulgaris, 601
CRAMBE, 751
  maritima, 751, 789
CRATÆGUS, 596
  Aria, 607, 6001
  Glastonburiensis, 596
  oxyacantha, 596
  oxyacantha, 597
  torminalis, 604
CREPIS, 900
  biennis, 901
  fœtida, 900
  pulchra, 901
  tectorum, 900
CRITHMUM, 374
  maritimum, 374
CROCUS, 93
  autumnalis, 94
  nudiflorus, 95
  officinalis, 94
  officin. sativ., 94
  sylvest., 94
  reticulatus, 95
  sativus, 93
  susianus, 95
  vernus, 94

Cryptomyces Wauchii, 52
Cryptosphæria mille-punctata, 81
Cucubalus Behen, 544
  Otites, 542
  viscosus, 543
CUSCUTA, 251
  Epithymum, 251
  Europæa, 251
Cyathea dentata, 997
  fragilis, 1000
  incisa, 1000
CYCLAMEN, 291
  hederifolium, 291
  Europæum, 291
CYNODON, 145
  dactylon, 145
CYNOGLOSSUM, 281
  officinale, 281
  officinalis γ, 282
  omphalodes, 282
  sylvaticum, 281
CYNOSURUS, 177
  cæruleus, 165
  cristatus, 177
  echinatus, 177
CYPERUS, 106
  acicularis, 106
  fuscus, 107
  longus, 106
  nigricans, 108
CYPRIPEDIUM, 48
  calceolus, 48
Cystea angustata, 1001
  fragilis, 1000
  regia, 1000

D.

DACTYLIS, 175
  glomerata, 175
Daltonia heteromalla, 1010
DAPHNE, 489
  Cneorum, 491
  laureola, 490
  Mezereum, 489
DAUCUS, 367
  carota, 367
  maritimus, 368
  polygamus, 367
DATURA, 315
  stramonium, 315
DELPHINIUM, 664
  consolida, 664
Dens leonis mont. ang., 890
DENTARIA, 766
  bulbifera, 766
DIANTHUS, 538
  armeria, 538
  barbatus, 538
  cœsius, 541
  caryophyllus, 539
  deltoides, 540
  glaucus, 540, 541
  prolifer, 539
  virgineus β, 541
Dicranum aciculare, 1019
  Adiantoides, 1066
  Bryoides, 1058
  callistomum, 1037
  Celsii, 1023, 1033
  cerviculatum, 1033
  crispum, 1045
  cylindricum, 1034
  flagellare, 1048
  flavescens, 1048
  flexuosum, 1005
  fuscescens, 1020
  glaucum, 1022
  heteromallum, 102
  interruptum, 1021
  majus, 1020
  hyperboreum, 1046
  longifolium, 1051
  montanum, 1048
  Osmundoides, 1038
  patens, 1041
  pellucidum, 1022
  polyphyllum, 1013
  pulvinatum, 1056
  purpureum, 1023
  pusillum, 1033
  rufescens, 1037
  scoparium, 1020
  scirroides, 1063
  Scottianum, 1048
  strictum, 1023
  strumiferum, 1056
  Tamarindifolium, 105
  Taxifolium, 1061
  uncinatum, 1033
  varium, 1021
  viridissimum, 1034
  viridulum, 1058
Didymodon capillaceum, 10
  flexifolium, 103
  heteromallum, 1045

Didymodum
  inclinatum, 1052
  purpureum, 1023
  rigidulum, 1053
  trifarium, 1044
Didymosporium vetulinum, 248
DIGITALIS, 739
  purpurea, 739
Digitaria sanguinalis, 145
  stolonifera, 146
Diotis maritima, 920
Diphyscium foliosum, 1011
Diplotaxis tenuifolia, 787
DIPSACUS, 215
  fullonum, 215
  pilosus, 217
  sylvestris, 216
DORONICUM, 946
  pardalianches, 946
Dorodice Scorpii, 947
Dothidea Alnea, 246
  Betulina, 248
  Robertiana, 807
  Ulmi, 353
DRABA, 754
  aizoides, 754, 790
  hirta, 755
  incana, 756, 790
  muralis, 755, 790
  Pyrenaica, 755
  rupestris, 790
  rupestris, 755
  stellata, 755
  verna, 755, 790
DROSERA, 410
  Anglica, 412
  longifolia, 411
  rotundifolia, 410
DRYAS, 638
  octopetala, 638

E

Echinophora spinosa, 365
ECHIUM, 286
  vulgare, 286
ELATINE, 501
  hydropiper, 502
  tripetala, 502
ELEOCHARIS, 105
  acicularis, 106
  multicaulis, 106
ELEOCHARIS
  palustris, 105
ELYMUS, 201
  arenarius, 201
  Europæus, 202
  geniculatus, 202
EMPETRUM, 210
  nigrum, 210
Encalypta alpina, 1036
  ciliata, 1036
  Daviesii, 1051
  rhaptocarpa, 1036
  vulgaris, 1036
EPILOBIUM, 469
  alpinum, 472
  alpinum, 472
  alsinifolium, 472
  angustifolium, 469
  hirsutum, 470
  hirsutum, 470
  Lysimachia, 472
  montanum, 470
  montanum γ, 471
  palustre, 471
  parviflorum, 470
  roseum, 471
  tetragonum, 471
  tetragonum var., 471
  villosum, 470
EPIMEDIUM, 235
  alpinum, 235
Epipactis ensifolia, 10
  ensifolia, 47
  grandiflora, 47
  lancifolia, 47
  latifolia, 10
  latifolia, 45
  nidus-avis, 36
  pallens, 10
  pallens, 47
  palustris, 10
  palustris, 46
  purpurata, 46
  rubra, 10
  rubra, 48
EQUISETUM, 972
  arvense, 973
  fluviatile, 974
  fluviatile, 975
  hyemale, 975
  limosum, 975
  palustre, 974
  sylvaticum, 972
  Telmateia, 974

ERICA, 482
cœrula, 480
cinerea, 484
Daboecia, 481
Daboecia, 481
didyma, 484
multiflora, 484
tetralix, 484
vagans, 483
vulgaris, 481
ERIGERON, 931
acre, 932
alphinum, 931
Canadense, 931
uniflorum, 932
Erineum Acerinum, 476
Alneum, 245
Betulæ, 248
clandestinum, 598
fagineum, 577
griseum, 510
Padi, 593
Populinum, 486
Pyrinium, 602
Sorbi, 607
tortuosum, 248
ERIOCAULON, 218
decangulare, 219
septangulare, 219
ERIOPHORUM, 98
alpinum, 100
augustifolium, 99
capitatum, 100
gracile, 100
polystachion, 99
pubescens, 101
Scheuchzeri, 100
triquetrum, 101
vaginatum, 98
ERODIUM, 797
cicutarium, 797
maritimum, 799
moschatum, 798
Erotium Rosarum, 625
ERYNGIUM, 361
campestre, 361
maritimum, 361
ERYSIMUM, 775
alliaria, 775, 792
Barbarea, 774
β, 774
cheiranthoides, 775, 792
Iris, 773
ERYSIMUM
officinale, 773
orientale, 776, 792
perfoliatum, 776
præcox, 774
Sophia, 773
ERYTHRÆA, 320
centaurium, 320
latifolia, 321
littoralis, 321
pulchella, 322
ERVUM, 846
hirsutum, 847
soloniense, 845
tetraspermum, 846
Erysiphe adunca, 486
EUONYMUS, 324
Europæus, 324
EUPATORIUM, 919
Cannabinum, 919
EUPHORBIA, 585
amygdaloides, 590
characias, 589
cyparissias, 590
esula, 589
exigua, 586
helioscopia, 587
Hiberna, 588
Lathyris, 586
Paralia, 586
Peplis, 585
Peplus, 585
platyphylla, 588
Portlandica, 587
stricta, 587
sylvatica, 590
verrucosa, 588
EUPHRASIA, 728
officinalis, 728
Odontites, 727
Europæa fructicosa, 5
herbacea, 5
EXACUM, 229
filiforme, 229
Exilaria flabellata, 669

F

FAGUS, 576
Fagus Castanea, 581
sylvatica, 576

FEDIA, 91
olitoria, 91
Fel Terræ, 321
FESTUCA, 179
arundinacea, 184
bromoides, 179
cæsia, 182
calamaria, 184
Cambrica, 183
decidua, 185
decumbens, 174
dumetorum, 182
duriuscula, 182, 183
elatior, 184
fluitans, 185
gigantea, 180
glabra, 183
loliacea, 185
myurus, 179
ovina, 181
ovina, 181, 182
pinnata, 192
β, 191
pratensis, 183
rubra, 183
rubra, 181
sylvatica, 191
tenuifolia, 182
uniglumis, 180
vivipera, 181
Ficaria verna, 677
Filago Gallica, 929
Germanica, 930
montana, 929
Filix humilis repens, 1003
non ramosa, 990
Fissidens Adiantoides, 1060
Bryoides, 1058
pulvinatus, 1056
strumifer, 1050
taxifolius, 1061
FONTINALIS, 1008
alpina, 1010
antipyretica, 1008
capillacea, 1009
minor, 1008
pennata, 1009
secunda, 1010
squamosa, 1009
FRAGARIA, 630
elatior, 631
vesca, 630
sterilis, 631
FRANKENIA, 452
lævis, 452
pulverulenta, 452
FRAXINUS, 79
excelsior, 79
heterophylla, 80
simplicifolia, 80
FRITILLARIA, 424
meleagris, 424
Fuga Dæmonum, 871
FUMARIA, 823
claviculata, 825
bulbosa β, 823
capnoides, 823
capriolata, 824
intermedia, 823
lutea, 823
officinalis, 824
parviflora, 824
solida, 823
spicata β, 824
Funaria hygrometrica, 1024

G

GALANTHUS, 417
nivalis, 417
GALEOBDOLON, 713
galeopsis, 713
luteum, 713
GALEOPSIS, 711
cannabina, 712
Galeobdolon, 713
grandiflora, 712
ladanum, 711
tetrahit, 712
tetrahit β, 712
versicolor, 712
villosa, 711
GALIUM, 221
anglicum, 226
aparine, 227
aristatum, 224
boreale, 226
cinereum, 224
cruciatum, 221
diffusum, 224
erectum, 223
erectum, 224
lævigatum, 224
mollugo, 224
mollugo β, 225

GALIUM
montanum, 222
montium, 222
palustre, 221
Parisiense, 226
procumbens, 222
pusillum, 223
saxatile, 222
scabrum, 225
spurium, 228
spurium, 225
sylvaticum, 224
tricorne, 225
uliginosum, 222
verrucosum, 227
verum, 225
Witheringii, 221
GENISTA, 828
Anglica, 830
pilosa, 829
scoparia, 827
tinctoria, 829
Genista, 827
GENTIANA, 358
amarella, 359
campestris, 360
campestris, 359
Centaurium, 321
concava, 538
filiformis, 229
nivalis, 359
pneumonanthe, 358
verna, 358
Gentianella fugax verna, seu præco
360
purp. min. 360
GERANIUM, 800
batrachoides alterum, 802
Cicutarium, 798
columbinum, 802
columbinum humile, fl. cærul. min. 803
columbinum majus, fl. min. cærul., 803
dissectum, 802
hæmatodes Lancast. fl. eleg. striat., 801
humile, 803
Lancastriense, 801
lucidum, 805
lucidum saxatile, fol. G. Robertiani, 807
malvæfolium, 803
parviflorum, 803
GERANIUM
maritimum, 799
molle, 804
moschatum, 799
nodosum, 801
phæum, 804
Pimpinellifolium, 798
pratense, 804
pusillum, 803
Pyrenaicum, 801
Robertianum, 806
rotundifolium, 805
sanguineum, *800*
sylvaticum, 802
GEUM, 637
intermedium, 638
rivale, 638
fol. subrotund., &c. 529
urbanum, 637
Glastum sativum, 752
sylvestre, 752
GLAUCIUM, 644
luteum, 644
Phœnicium, 644
violaceum, 645
GLAUX, 340
maritima, 340
GLECHOMA, 707
hederacea, 707
Glyceria aquatica, 165
distans, 166
fluitans, 185
procumbens, 172
rigida, 172
Glyphomitrion Daviesii, 1051
GNAPHALIUM, 925
alpinum, 928
Dioicum, 929
Gallicum, 929
Germanicum, 930
luteo-album, 925
margaritaceum, 92
minimum, 929
montanum, 929
Norvegicum, 927
rectum, 928
supinum, 928
sylvaticum, 927
sylvaticum β, 928
uliginosum, 928
Goodyera repens, 9
repens, 35
Gramen loliaceum, 199

- *Gram. spicat. secalin. marit. minus,*
- *Griffithia Daviesii,* 1051
- *Grimmia acuta,* 1041
  - *alpicola,* 1029
  - *apocarpa,* 1029
  - *apocaula,* 1029
  - *calcarea,* 1032
  - *cirrata,* 1042
  - *controversa,* 1036
  - *conostoma,* 1051
  - *curvirostrum,* 1041
  - *Daviesii,* 1051
  - *Dicksoni,* 1042
  - *heteromalla,* 1045
  - *inclinata,* 1052
  - *lanceolata,* 1042
  - *nigrita,* 1056
  - *pulvinata,* 1056
  - *pusilla,* 1033
  - *recurvata,* 1054
  - *recurvirostra,* 1046
  - *rivularis,* 1029
  - *verticillata,* 1040
- Gymnadenia conopsea, 9
- *Gymnostomum curvirostrum,* 1044
  - *fasciculare,* 1034
  - *Heimii,* 1031
  - *intermedium,* 1037
  - *luteolum,* 1044
  - *obtusum,* 1031
  - *Osmundaceum,* 1039
  - *ovatum,* 1031
  - *paucifolium,* 1034
  - *pennatum,* 1039
  - rufescens, 1037
  - *stelligerum,* 1041, 1044
  - *tenue,* 1034
  - *truncatum,* 1037
  - *truncatulum,* 1037
  - *viridissimum,* 1034

H

- Habenaria albida, 9
  - *albida,* 35
  - bifolia, 9
  - *bifolia,* 27
  - viridis, 9
  - *viridis,* 34
- HEDERA, 337
  - helix, 337
  - *terrestris,* 7[illegible]7
- *Hedwigia ciliata,* 1029
- *Hedypnois autumnalis,* 889
  - *Hieracioides,* 882
  - *hirta,* 890
  - *hispida,* 890
  - *paludosa,* 889
  - *Taraxaci,* 893
- HEDYSARUM, 849
  - onobrychis, 849
- HELLEBORUS, 685
  - fœtidus, 686
  - viridis, 685
- *Helminta Echioides,* 882
- HERACLEUM, 374
  - sphondylium, 375
  - *angustifolium,* 375
- Herminium monorchis, 9
  - *monorchis,* 41
- HERNIARIA, 342
  - glabra, 342
  - *hirsuta,* 343
- HESPERIS, 778
  - *inodora,* 779
  - matronalis, 778, 792
- HIERACUM, 891
  - alpinum, 892
  - *fol. acut. min.,* 889
  - pilosella, 891
  - *præmors, &c.* 889
  - Taraxaci, 893
  - amplexicaule, 898
  - aurantiacum, 894
  - auricula, 894
  - denticulatum, 895
  - dubium, 893
  - Cerinthoides, 898
  - *Halleri,* 899
  - Lawsoni, 895
  - maculatum, 896
  - molle, 899
  - murorum, 897
  - *murorum a,* 898
  - *γ,* 896
  - paludosum, 896
  - *prenanthoides,* 895
  - prenanthoides, 895
  - *pulchrum,* 902
  - *pulmonarioides,* 897
  - *pulmonarium,* 897
  - sabaudum, 894
  - *spicatum,* 895
  - sylvaticum, 896, 898
  - *sylvaticum a,* 898
  - umbellatum, 899

HIERACUM
villosum, 898
HIEROCHLOE, 159
borealis, 159
HIPPOCREPIS, 848
comosa, 848
HIPPOPHAE, 241
rhamnoides, 241
HIPPURIS; 6
vulgaris, 6
HOLCUS, 158
alpina, 196
avenaceus, 159
avenaceus, 193
fatua, 194
flavescens, 194
mollis, 158
lanatus, 158
planiculmis, 196
pratensis, 195
pubescens, 194
strigosa, 195
Hookeria lucens, 1062
HOLOSTEUM, 209
umbellatum, 209
HORDEUM, 203
marinum, 205
maritimum, 204
maritimum, 204
murinum, 203
murinum β, 204
nodosum, 204
pratense, 204
secalinum, 204
sylvaticum, 203
HOTTONIA, 293
palustris, 293
HUMULUS, 350
lupulus, 350
Hutchinsia petræa, 789
petræa, 757
Hyacinthus non-scriptus, 430
Hyacinthus, 431
racemosus, 431
HYDROCHARIS, 515
morsus-ranæ, 515
HYDROCOTYLE, 362
inundata, 381
vulgaris, 362
Hymenophyllum alatum, 1003
Tunbridgense, 1003
HYOSCIAMUS, 316
albus, 317
niger, 316
Hyoseris minima, 904
HYPERICUM, 869
androsæmum, 869
barbatum, 875
calycinum, 875
dubium, 872
elodes, 873
hirsutum, 874
humifusum, 872
montanum, 873
perforatum, 870
pulchrum, 874
quadrangulum, 870
HYPNUM
abietinum, 1070
adiantoides, 1060
adnatum, 10[illegible]3
aduncum, 1073
albicans, 1066
Alopecurum, 1074
alpinum, 1068
asplenioides, 1058
atro-virens, 1079
atro-virens, 1075, 1077
attenuatum, 1075
attenuatum, 1079
brevirostre, 1067
bryoides, 1058
cassubicum, 1065
chrysocomum, 1023
clavellatum, 1081
complanatum, 1060
complanatum β, 1060
compressum, 1074
confertum, 1081
confertum, 1076
crenulatum, 1067
crispum, 1063
crista-castrensis, 1070
crista-castrensis, 1074
cupressiforme, 1073
curtipendulum, 1078
curvatum, 1080
cuspidatum, 1077
cylindricum, 1076
dendroides, 1074
denticulatum, 1059
Dicksoni, 1068
Donnianum, 1059
dubium, 1070
dubium, 1070
flagellare, 1071

HYPNUM
fallax, 1070
filamentosum, 1077
filamentosum, 1075, 1079
filicinum, 1069
filifolium, 1077
filiforme, 1077
fluitans, 1067
fluviatile, 1073
gracile, 1075
Halleri, 1062
heteromallum, 1010
illecebrum, 1078
intricatum, 1063
læte-virens, 1061
loreum, 1073
lucens, 1061
luridum, 1073
lutescens, 1065
medium, 1064
molle, 1076
molluscum, 1074
murale, 1076
muticum, 1078
myosuron, 1079
myosuroides, 1080
myosuroides, 1080
β, 1080
γ, 1076
myurum, 1080
nigro-viride, 1074
nitens, 1068
ornithopodoides, 1075
palustre, 1072
parietinum, 1069
parietinum, 1069
pennatum, 1068
pennatum, 1000
plumosum, 1068
polyanthos, 1074
prælongum, 1071
proliferum, 1068
prolixum, 1065
protensum, 1062
pulchellum, 1064
pumilum, 1068
purum, 1077
purum, 1078
recognitum, 1069
riparioides, 1065
riparium, 1076
rotundifolium, 1061
rufescens, 1063
rugosum, 1071
rugulosum, 1071
ruscifolium, 1064

HYPNUM
rutabulum, 1067
rutabulum γ, 1066
δ, 1065
Schreberi, 1078
sciuroides, 1062
scorpioides, 1072
sericeum, 1079
sericeum β, 1068
γ, 1065
serpens, 1080
serratulum, 1081
Smithii, 1067
splendens, 1069
squarrosum, 1072
squarrulosum, 1062
stellatum, 1062
Stokesii, 1071
stramineum, 1075
striatum, 1066
strumosum, 1050
subtile, 1080
Swartzii, 1071
sylvaticum, 1060
taxifolium, 1061
Trichomanoides, 1059
trifarium, 1075
triquetrum, 1066
umbratum, 1071
undulatum, 1065
velutinum, 1081
viticulosum, 1064
HYPOCHÆRIS, 902
glabra, 902
maculata, 902
radicata, 903
Hysterium Fraxini, 81
melaleucum, 479
varium, 510

I & J

JASIONE, 310
montana, 310
JUNIPERUS, 795
communis, 795
nana, 797
JUNCUS, 437
acutus, 438
acutus β, 438
acutiflorus, 445
arcticus, 441
arcuatus, 449
articulatus, 445
β, 446

JUNCUS
biglumis, 444
bufonius, 443
bulbosus, 442
bulbosus β, 442
campestris β, 449
capitatus, 444
castaneus, 445
carnosus, 442
compressus, 442
conglomeratus, 439
effusus, 439
effusus β, 439
filiformis, 440
Forsteri, 448
Gesneri, 443
glaucus, 439
gracilis, 442
inflexus, 439
lampocarpus, 446
liniger, 449
maritimus, 438
maximus, 448
nemorosus, 445
obtusiflorus, 446
pilosus, 447
polycephalus, 447
spicatus, 449
squarrosus, 441
subverticillatus, 444
sudeticus, 449
supinus, 444
sylvaticus, 445, 448
tenuis, 443
trifidus, 441
triglumis, 444
uliginosus, 443
uliginosus, 444
IBERIS, 76
amara, 765, 790
ILLECEBRUM, 338
verticillatum, 339
ILEX, 254
aquifolium, 254
IMPATIENS, 332
noli-me-tangere, 332
IMPERATORIA, 390
ostruthium, 391
Intestinorum Solanum, 396
INULA, 944
Crithmoides, 946
cylindrica, 946
Dysenterica, 945
Helenium, 944
INULA
pulicaria, 945
uliginosa, 946
IRIS, 95
fœtida, 97
fœtidissima, 96
pseud-acorus, 96
ISATIS, 752
sylvestris, 752
tinctoria, 752, 789
ISNARDIA, 242
palustris, 242
ISOETES, 980
lacustris, 980
JUNGERMANNIA
adunca, 1095
albicans, 1090
albicans, 1095
alpina, 1097
angulosa, 1083
Asplenioides, 1084
barbata, 1086
bicuspidata, 1088
bidentata, 1085
ciliaris, 1095
ciliaris, 1094
cinerea, 1097
cochleariformis, 1090
complanata, 1092
concinnata, 1096
curvifolia, 1097
dilatata, 1093
emarginata, 1086
epiphylla, 1082
excisa, 1093
fissa, 1087
fruticulosa, 1083
furcata, 1083
julacea, 1095
Juniperina, 1095
macrorhiza, 1086
minuta, 1088
multifida, 1084
multiflora, 1092
nemorosa, 1089
nemorosa β purpurascens, 1091
ovata, 1091
pauciflora, 1089
pinguis, 1084
platyphylla, 1094
polyanthos, 1087
pulcherrima, 1093
pumila, 1097
purpurea, 1091

- JUNGERMANNIA
  - pusilla, 1083
  - quinquedentata, 1086
  - radicans, 1091
  - reptans, 1091
  - resupinata, 1090
  - rupestris, 1096
  - scalaris, 1085
  - *setacea*, 1092
  - sinuata, 1084
  - Sphagni, 1087
  - sphæro-cephala, 1086
  - spinulosa, 1088
  - Tamarisci, 1093
  - *Tamariscifolia*, 1093
  - *Tamariscina*, 1093
  - tomentella, 1094
  - trichophylla, 1096
  - trilobata, 1091
  - undulata, 1089
  - varia, 1095
  - ventricosa, 1088
  - viticulosa, 1087

- KNAPPIA, 151
  - agrostidea, 151
- KOBRESIA, 139
  - Caricina, 139
- *Koelreuteria hygrometrica*, 1024

- LACTUCA, 885
  - saligna, 886
  - scariola, 885
  - virosa, 885
- LAMIUM, 707
  - album, 708
  - amplexicaule, 709
  - incisum, 708
  - *luteum*, 713
  - maculatum, 709
  - purpureum, 708
  - *purpureum* β, 709
  - *rubrum minus*, &c., 709
- *Lapathum aureum*, 456, 457
  - *fol. acut.* &c., 456
  - *viride*, 454
- LAPSANA, 903
  - communis, 903
  - *minima*, 904
  - pusilla, 904
- LATHRÆA, 730
  - squamaria, 731
- LATHYRUS, 837
  - aphaca, 837
  - hirsutus, 838
  - latifolius, 840
  - Nissolia, 838
  - palustris, 840
  - pratensis, 839
  - sylvestris, 839
- LAVATERA, 810
  - arborea, 810
- LEDUM, 519
  - palustre, 520
- *Leersia ciliata*, 1036
  - *lanceolata*, 1042
  - *vulgaris*, 1036
- LEMNA, 49
  - gibba, 50
  - minor, 49
  - polyrrhiza, 50
  - trisulca, 49
- LEONTODON, 887
  - autumnale, 889
  - hirtum, 890
  - hispidum, 890
  - *officinale*, 888
  - *Raii*, 889
  - *Taraxacon*, 888
  - taraxacum, 887
  - *Taraxacum* γ, 890
    - δ *palustris*, 889
    - *paludosum*, 889
- LEONURUS, 717
  - cardiaca, 717
  - *Galeobdolon*, 713
- LEPIDIUM, 756
  - *Anglicum*, 765
  - campestre, 758, 790
  - *didymum*, 765
  - hirtum, 758
  - latifolium, 757, 790
  - petræum, 757
  - ruderale, 758, 790
- *Leskea sericea*, 1079
- LEUCOJUM, 418
  - æstivum, 418
- *Leucodon sciuroides*, 1063
- LIGUSTICUM, 376
  - cornubiense, 376
  - *Meum*, 393
  - *Phellandrium*, 284

LIGUSTICUM
Scoticum, 376
LIGUSTRUM, 12
vulgare, 13
Lilium Martagon, 452
Limodorum Austriacum, 33
LIMOSELLA, 742
aquatica, 742
Linaria aurea Traji, 919
LINNÆA, 741
borealis, 741
LINUM, 407
angustifolium, 408
catharticum, 409
perenne, 408
radiola, 263
tenuifolium, 409
usitatissimum, 407
Listera cordata, 10
cordata, 40
nidus-avis, 36
ovata, 16
ovata, 39
LITHOSPERMUM, 279
arvense, 279
maritimum, 283
officinale, 279
purpuro-cæruleum, 279
LITTORELLA, 229
lacustris, 229
LOBELIA, 307
Dortmanna, 307
urens, 307
LOLIUM, 199
arvense, 200
bromoides, 180
perenne, 199
temulentum, 200
LONICERA, 308
caprifolium, 308
periclymenum, 309
xylosteum, 310
Loranthus, 242
LOTUS, 862
angustissimus, 864
corniculatus, 863
corniculati maj., 863
decumbens, 864
diffusus, 865
gibbus, 863
major, 863
pentaphyl. min. hirsut., &c., 86
LOTUS
pilosus, 868
LUCIOLA, 447
arcuata, 449
campestris, 448
congesta, 449
Forsteri, 447
liniger, 448
maxima, 448
pilosa, 447
spicata, 449
sylvatica, 448
LYCHNIS, 562
alpina, 564
dioica, 562
flos-cuculi, 563
maj. noct. &c., 543
viscaria, 563
vulnerata, 543
Lycoperdon epiphyllum, 934
LYCOPODIUM, 976
alpinum, 979
annotinum, 978
clavatum, 977
inundatum, 977
Selago, 978
Selaginoides, 977
LYCOPSIS, 286
arvensis, 286
LYCOPUS, 25
europæus, 25
LYSIMACHIA, 294
nemorum, 295
nummularia, 295
thyrsiflora, 295
vulgaris, 294
LYTHRUM, 573
hyssopifolium, 574
salicaria, 573

M

Maesia uliginosa, 1020
MALAXIS, 44
Loeselii, 10
Loeselii, 40
paludosa, 44
MALVA, 808
moschata, 810
parviflora, 808
pusilla, 808
rotundifolia, 808
sylvestris, 808

MARCHANTIA, 1098
androgyna, 1100
conica, 1099
cruciata, 1099
hemispherica, 1099
polymorpha, 1098

MARRUBIUM, 717
vulgare, 717
Mathiola sinuata, 792
sinuata, 778
incana, 792
incana, 778

MATRICARIA, 952
chamomilla, 952
inodora γ, 952
inodora, 952
maritima, 952
Parthenium, 951
Maesia dealbata, 1035

MEDICAGO, 865
Arabica, 867
Medica cochleata, 867
echinata min., 868
falcata, 866
lupulina, 866
maculata, 867
minima, 868
muricata, 868
polycarp. fruct. min., &c., 867
polymorpha, 867
polymorpha α., 867
β., 868
Arab., 867
min., &c., 868
muricat., 868
sativa, 865

MELAMPYRUM, 728
arvense, 729
cristatum, 728
pratense, 729
sylvaticum, 730

MELICA, 163
cærulea, 163
montana, 163
nutans, 163
Melissa Calamintha, 723
Nepeta, 722

MELITTIS, 723
grandiflora, 723
melissophyllum, 723
Melissophyllum, 724

MENTHA, 698
acutifolia, 704
arvensis, 705
arvensis var., 703, 706
agrestis, 706
aquatica, 703
aquatica exigua, 703
cardiaca, 705
citrata, 701
crispa, 699
gentilis, 704
gentilis, 705, 706
gracilis, 705
hirsuta, 702
odorata, 702
paludosa, 703
palustris, 703
piperita, 701
piperita, 701, 703
præcox, 706
pratensis, 705
rivalis α, 704
rivalis, var., 703
rubra, 704
rubra, 705
rotundifolia, 699
rotundifolia, 699
sativa, 700, 703, 704
spicata α *virid.*, 700
sylvestris, 698
sylvestris, 699
variegata, 705
verticillata, 70[illegible]
villosa, 698
viridis, 700

MENYANTHES, 29
nymphæoides, 29
trifoliata, 292

MENZIESIA, 480
cærulea, 480
polifolia, 480

MERCURIALIS, 513
annua, 514
perennis, 513

MESPILUS, 598
cotoneaster, 600
Germanica, 599
oxyacantha, 597

MEUM, 393
athamanticum, 39
fœniculum, 393
Meum, 393

MILIUM, 153
effusum, 153
lendigerum, 153

MNIUM, 1018
aciculare, 1018
androgynum, 1052
annotinum, 1025
arcuatum, 1023
cæspiticium, 1027
capillare, 1025
cirratum, 1042
crudum, 1027
cuspidatum, 1024
fontanum, 1020
fissum, 1087
glaucum, 1021
heteromallum, 1021
hornum, 1025
hygrometricum, 1024
Jungermannia, 1091
marchicum, 1020
nutans, 1023
Osmundaceum, 1039
palustre, 1022
pellucens, 1022
pellucidum, 1019
Polytrichoides, 1016
proliferum, 1026
punctatum, 1025
purpureum, 1022
pyriforme, 1054
ramosum, 1022
scoparium, 1019
serpyllifolia. β., 1026
β., 1024
undulat., 1026
serratum, 1057
setaceum, 1035
simplex, 1021
triquetrum, 1028
turbinatum, 1024
uliginosum, 1020
undulatum, 1026

MOENCHIA, 262
erectâ, 262
glauca, 263
quaternella, 263
sativa, 750
Mollugo mont. minor, Gallio alb. similis, 225

MONOTROPA, 519
hypopithys, 519.

MONTIA, 208
fontana, 208
Mucor granulosus, 476
Muscus ex craneo humano, 1079
Myagrum sativum, 750
MYOSURUS, 413
minimus, 413
MYOSOTIS, 275
alpestris, 277
arvensis, 278
arvensis, β., 278
cæspitosa, 276
intermedia, 277
palustris, 275
rupicola, 278
scorpioides β., 278
γ, 277, 278
arvensis, 278
palustris, 276
sylvatica, 277
versicolor, 278
MYRICA, 250
Gale, 250
MYRIOPHYLLUM, 511
spicatum, 511
verticillatum, 511
MYRRHIS, 389
aromatica, 390
[illegible], 389
odorata, 390
temula, 389
temulenta, 389
temulentum, 389

NARCISSUS, 419
biflorus, 420
poeticus, 419
pseudo-narcissus, 420
NARDUS, 98
stricta, 98
NARTHECIUM, 432
ossifragum, 432
Nasmythia articulata, 219
NASTURTIUM, 770
amphibium, 771, 791
officinale, 770, 791
palustre, 772
sylvestre, 771, [illegible]
terrestre, 772, 791

Neckera curtipendula, 1078
heteromalla, 1010
pinnata, 1009
pumila, 1068
viticulosa, 1064
Neottia spiralis, 9
gemmipara, 38
spiralis, 38
NEPETA, 695
cataria, 695
NUPHAR, 653
lutea, 653
minima, 654
pumila, 654
NYMPHÆA, 652
alba, 652
lutea, 654

O

Oculus Bovis, 953
ŒNANTHE, 381
crocata, 382
fistulosa, 381
pimpinelloides, 382
ŒNOTHERA, 472
biennis, 473
ONONIS, 832
arvensis, 833
arvensis α, 833
γ, 834
inermis, 833
repens, 834
spinosa, 832
spinosa β, 833
ONOPORDON, 916
Acanthium, 916
CARLINA, 916
vulgaris, 917
OPHIOGLOSSUM, 980
vulgatum, 981
OPHRYS, 36
anthropophora, 41
apifera, 429
arachnites, 44
aranifera, 43
corallorhiza, 37
cordata, 40
fucifera, 44
gemmifera, 38
OPHRYS
insectifera, 43
myodes, 42
lilifola Loeselii, 40
Loeselii, 40
monorchis, 40
muscifera 9, 42
nidus-avis, 36
ovata, 38
paludosa, 45
spiralis, 37
ORCHIS, 26
abortiva, 745
albida, 35
bifolia, 26
conopsea, 32
fusca, 9
fusca, 30
hircina, 33
latifolia, 9, 31
maculata, 9, 31
mascula, 8, 28
militaris, 9, 30
mil. purpurea, 30
Moravica, 30
morio, 8, 28
pyramidalis, 9, 27
tephrosanthos, 31
ustulata, 8, 29
viridis, 34
ORIGANUM, 718
vulgare, 718
vulgare, 702
ORNITHOPUS, 847
perpusillus, 847
ORNITHOGALUM, 426
luteum, 426
nutans, 428
Pyrenaicum, 427
umbellatum, 427
OROBRANCHE, 743
cærulea, 445
caryophyllacea, 743
elatior, 744
fl. minor, 744
major, 743
minor, 744
purpurea, 745
ramosa, 745
rubra, 744
OROBUS, 836
niger, 836
sylvaticus, 836
tuberosus, 837

Orthotrichum anomalum, 1030
  crispum, 1045
  cupulatum, 8030
  nudum, 1030
  striatum, 1030

OSMUNDA, 981
  Lunaria, 981
  crispa, 984
  regalis, 982
  spicant., 982

OXALIS, 560
  acetosella, 561
  corniculata, 561
  pusilla, 562

OXYRIA, 453
  reniformis, 453

PÆONIA, 662
  corallina, 662
  mas, 662
  officinalis β, 662

PANICUM, 143
  crus-galli, 144
  dactylon, 146
  sanguinale, 14[illegible]
  verticillatum, 143
  viride, 144

PAPAVER, 645
  argemone, 646
  cambricum, 650
  dubium, 648
  hybridum, 645
  maritimum, 646
  nudicaule, 646
  rhæas, 646
  somniferum, 648

PARIETARIA, 237
  officinalis, 237

PARIS, 500
  quadrifolia, 500

PARNASSIA, 404
  palustris, 404

PASTINACA, 391
  sativa, 391

PEDICULARIS, 731
  palustris, 731
  sylvatica, 732

PEPLIS, 452
  portula, 452
Percepier Anglorum, 244
Persicaria angustifol., &c., 495
Pes Cati, 927
Petra pungens, 244

PEUCEDANUM, 373
  minus, 397
  officinale, 373
  officinale, 383
  Silaus, 374
Peziza Cerasi, 594
  tuberosa, 572
Phacidium coronatum, 510

PHALARIS, 141
  arenaria, 146
  arundinacea, 142
  aspera, 147
  Canariensis, 142
  phleoides, 142

PHASCUM, 100
  acaulon, 1005
  acaulon, 1007
    β, 1036
  alternifolium, 1006
  axillare, 1007
  brevicollum, 1007
  cuspidatum, 1005
  maximum, 1011
  montanum, 1011
  muticum, 1005
  nitidum, 1007
  pedunculatum, 1012
  piliferum, 1007
  rectum, 1007
  repens, 1011
  serratum, 1006
  stoloniferum, 1006
  strictum, 1007
  subulatum, 1006
Phellandrium aquaticum, 38

PHLEUM, 146
  alpinum, 148
  arenarium, 146
  asperum, 146
  Boehmeri, 142
  crinitum, 152
  Michelii, 148
  nodosum, 148
  paniculatum, [illegible]
  pratense, 147
Phyllitis, 986

PHYTEUMA, 306
  orbiculare, 306
PICRIS, 881
  Echioides, 881
  Hieracioides, 882
  [illegible] *unifloro, &c.*, 884
PILULARIA, 979
  globulifera, 979
PIMPINELLA, 394
  dioica, 396
  dissecta, 395
  magna, 396
  minor α, 395
    β, 395
  orientalis, 395
  pumila, 397
  pumilum, 397
  saxifraga, 395
PINGUICULA, 22
  grandiflora, 23
  Lusitanica, 22
  vulgaris, 22
PINUS, 813
  sylvestris, 815
PISUM, 835
  maritimum, 835
PLANTAGO, 230
  aquat. longifol., 463
  aquatica, 464
  coronopus, 233
  damasonium, 464
  lanceolata, 231
  major, 230
  maritima, 232
  media, 231
  natans, 464
POA, 165
  adscendens, 173
  alpina, 167
  annua, 168
  angustifolia, 167
  aquatica, 165
  bulbosa, 168
  cæsia, 174
  compressa, 173
  cristata, 171
  decumbens, 174
  distans, 166
  fluitans, 185
  flexuosa, 168
  glauca, 173
  humilis, 167
  laxa, 168
POA
  loliacea, 207
  maritima, 172
  nemoralis, 171
  nemoralis, 167
  pratensis, 166
  procumbens, 172
  retroflexa, 166
  rigida, 172
  rupestris, 172
  sub-cærulea, 167
  trivialis, 169
Pohlia elongata, 1049
POLEMONIUM, 300
  cæruleum, 300
Pollichia amplexicaulis, 709
  Galeobdolon, 713
POLYCARPON, 210
  tetraphyllum, 210
POLYGALA, 826
  vulgaris, 826
POLYGONUM, 493
  amphibium, 494
  aviculare, 498
  Bistorta, 497
  Convolvulus, 500
  Fagopyrum, 499
  hydropiper, 494
  lapathifolium, 496
  marinum, 599
  minus, 495
  pallidum, 496
  Pensylvanicum, 496
  Persicaria, 495
  Persicaria β & δ, 49
    η, ε, 497
  viviparum, 498
POLYPODIUM, 990
  aculeatum, 997
  Arvonicum, 994
  calcareum, 1001
  Cambricum, 993
  cristatum, 996
  cristatum, 999
  dilatatum, 999
  Dryopteris, 1001
  dentatum, 997
  Filix-fœmina, 998
  Filix-mas, 995
  fontanum, 997
  fragile, 996
  fragrans, 995
  Hyperboreum, 994
  Ilvense, 993

POLYPODIUM
Lonchitis, 993
montanum, 995
Oreopteris, 994
Phegopteris, 994
regium, 1000
rhæticum, 1000
spinulosum, 998
Thelyptèris, 996
Thelypteris, 995
trifidum, 1000
vulgare, 992
POLYPOGON, 152
Monspeliensis, 152
POLYTRICHUM, 1014
Aloides, 1016
alpinum, 1047
attenuatum, 1016
commune, 1015
crassisetum, 1018
Dicksoni, 1017
gracile, 1016
Hercynicum, 1017
Juniperinum, 1016
nanum, 1016, 1017
Norvegicum, 1018
piliferum, 1016
Polytrichoides, 1016
rubellum, 1017
septentrionale, 1018
sexangulare, 1018
striatum, 1030
strictum, 1010
subrotundum, 10
undulatum, 1033
urnigerum, 1017
Polythrincium Trifolii, 852
POPULUS, 485
alba, 486
canescens, 487
nigra, 488
tremula, 487
Porcellia, 903
POTAMOGETON, 255
compressum, 258
compressum, 258
crispum, 257
cuspidatum, 258
densum, 257
fluitans, 256
gramineum, 259
heterophyllum, 252
lanceolatum, 259
lucens, 257
POTAMOGETON
natans, 255
pectinatum, 258
perfoliatum, 257
pusillum, 260
serratum, 258
POTENTILLA, 632
alba, 636
alpestris, 635
anserina, 633
argentea, 634
Fragarioides, 632
Fragaria, 632
Fragariastrum, 632
fruticosa, 632
opaca, 635
reptans, 634
rupestris, 633
sylvestris, 636
Tormentilla, 636
tridentata, 633
verna, 634
POTERIUM, 663
sanguisorba, 663
PRENANTHES, 887
muralis, 887
Prenanthes Hieracifolia, 9
PRIMULA, 287
elatior, 288
farinosa, 290
officinalis, 287
Primula, 289
Scotica, 291
sylvestris, 288
veris, 289
β, 289
γ acaulis, 288
elatior, 289
officinalis, 289
vulgaris, 287
vulgaris β, 289
PRUNELLA, 725
vulgaris, 725
PRUNUS, 592
avium, 594
cerasus, 593
cerasus δ, 594
communis domestica,
domestica, 594
Gallica, 594
insititia, 596
nigra, 594
padus, 592

PRUNUS
  spinosa, 595
  sylvestris, 595
Pterigynandrum gracile, 1075
PTERIS, 983
  crispa, 983
  aquilina, 984
  cæspitosum, 1076
Petrogonium filiforme, 1076
  gracile, 1075
  sciuroides, 106
  Smithii 1068
Puccinia Buxi, 254
  Chaerophylli, 380
  Heraclei, 375
  Pruni, 595
  Rosæ, 625, 628
PULMONARIA, 282
  angustifolia, 282
  maritima, 283
  officinalis, 282
PYRETHRUM, 950
  inodorum, 951
  maritimum, 952
  Parthenium, 951
PYROLA, 523
  media, 524
  minor, 524
  rosea, 525
  rotundifolia, 523
  rotundifolia, 524
  secunda, 525
  uniflora, 526
PYRUS, 601
  Achras, 601
  aria, 607
  aria β, 607
  aucuparia, 605
  communis, 601
  domestica, 605
  hybrida, 607
  intermedia, 607
  malus, 602
  pinnatifida, 607
  Sorbus, 605
  torminalis, 603
QUERCUS, 502
  fœmina, 502
  pedunculata, 502
  robur, 502
  robur, 503
  sessilis, 503
  sessiliflora, 503

R

Radicula sylvestr. seu palustr., 772
RADIOLA, 263
  linoides, 263
  millegrana, 263
RANUNCULUS, 677
  acris, 680
  alpestris, 681
  aquatilis, 682
  arvensis, 684
  auricomus, 680
  bulbosus, 683
  ficaria, 677
  flammula, 678
  gramineus, 679
  hederaceus, 681
  hirsutus, 683
  lingua, 679
  parviflorus, 681
  parvulus, 683
  repens, 684
  reptans, 679
  sceleratus, 680
RAPHANUS, 788
  maritimus, 789, 793
  Raphanistrum, 788, 793
  Rapum, rad. oblong., 7[illegible]
  longum, [illegible]83
Remora aratri, 833
RESEDA, 583.
  luteola, 583
  lutea, 584
RHAMNUS, 322
  catharticus, 322
  frangula, 323
Rheum digynum, 453
RHINANTHUS, 727
  crista-galli, 727
  major, 727
RHODIOLA, 504
  rosea, 505
RHYNCHOSPORA, 109
  alba, 109
  alba, 109
  compressus, 108
  fusca, 109
RICCIA, 1101
  fluitans, 1102
  fruticulosa, 1083
  glauca, 1101
  minima, 1101
  natans, 1101

RIBES, 333
  alpinum, 334
  fruct. dulc., 333
  fruct. parv. 333
  grossularia, 335
  petræum, 334
  nigrum, 335
  rubrum, 333
  spicatum, 334
  Uva-crispa, 336
ROSA, 610
  arvensis, 611
  Borreri, 619
  bractescens, 61[illegible]
  canina, 617
  canina pubescens, 619
  cæsia, 619
  cinnamomea, 620
  Ciphiana, 612
  collina, 618
  dumetorum, 619
  eglantina, 616
  Forsteri, 617
  glaucophylla, 619
  gracilis, 614
  Hibernica, 615
  involuta, 613
  micrantha, 617
  mollis, 613
  odoratissima, 61[illegible]
  pimpinellifolia, 612
  rubella, 6[illegible]
  rubiginosa, 615
  rubiginosa, 616
    617
  sarmentacea, 619
  scabriuscula, 615
  spinosissima, 611, 612
  suavifolia, 616
  subglobosa, 614
  systyla, 618
  tomentosa, 614
  tomentosa β, 613, 615
  villosa, 613
  villosa, 614
ROTTBOLLIA, 201
  incurvata, 201
RUBUS, 622
  affinis, 629
  arcticus, 629
  cæsius, 626
  Chamæmorus, 630
  corylifolius,
  fruticosus, 627

RUBUS
  fruticosus major, 627
  glandulosus, 628
  idæus, 623
  leucostachys, 628
  nitidus, 628
  plicatus, 628
  rhamnifolius, 628
  saxatilis, 629
  suberectus, 626
RUBIA, 228
  Anglica, 228
  peregrina, 228
  sylvestris aspera, 228
  tinctorum, 228
RUMEX, 453
  acetosa, 458
  acetosella, 458
  acutus, 453
  alpinus, 455
  aquaticus, 455
  aureus, 456
  crispus, 454
  digynus, 453
  hydrolapathum, 455
  maritimus, 456
  obtusifolius, 457
  paludosus, 455
  palustris, 457
  pulcher, 456
RUPPIA, 260
  maritima, 260
RUSCUS, 92
  aculeatus, 92

S

SAGINA, 260
  aspetala, 261
  cerastoides, 262
  erecta, 263
  maritima, 261
  procumbens, 261
SAGITTARIA, 688
  sagittifolia, 688
Salicornia, 5
  fruticosa, 5
  herbacea, 5
SALSOLA, 352
  fruticosa, 35

SALVIA, 25
  pratensis, 26
  verbenaca, 26
SAMBUCUS, 400
  ebulus, 400
  nigra, 400
SAMOLUS, 308
  valerandi, 308
SANGUISORBA, 234
  officinalis, 235
SANICULA, 362
  Europæa, 362
SANTOLINA, 920
  maritima, 920
SAPONARIA, 537
  concav. Ang., &c. 538
  officinalis, 537
SATYRIUM, 33
  albidum, 35
  hircinum, 33
  viride, 34
  repens, 35
SALIX, 51
  accuminata, 75
  adscendens, 71
  alba, 76
  amygdalina, 59
  Andersoniana, 78
  appendiculata, 69
  aquatica, 73
  arbuscula, 64
  arenaria, 68
  arenaria, 69
  argentea, 69
  aurita, 72
  Borreriana, 63
  bicolor, 62
  caprea, 74
  caprea, 72, 73, 74, 7
  carinata, 67
  cærulea, 77
  chrysanthos, 74
  cinerea, 72
  cinerea, 73
  cotinifolia, 73
  Croweana, 58
  decipiens, 61
  depressa, 71
  Dicksoniana, 6
  fœtida, 78
  fissa, 58
  fusca, 70
SALIX
  fusca, 69
  Forbiana, 57
  Forsteriana, 78
  fragilis, 65
  glauca, 69
  Helix, 56
  herbacea, 67
  hirta, 78
  Hoffmanniana, 59
  humilis, 71
  Lambertiana, 57
  lanata, 74
  lanata, 79
  lanceolata, 59
  Lapponum, 69
  laurina, 63
  livida, 64
  mollissima, 79
  monandra, 56
  myrsinites, 66
  myrsinites, 66
  myrtilloides, 67
  nigricans, 62
  nitens, 63
  oleifolia, 73
  parvifolia, 71
  pentandra, 61
  petiolaris, 63
  phylicifolia, 63
  prunifolia, 66
  prunifolia, 66
  purpurea, 56
  purpurea, 56
  prostrata, 70
  repens, 71
  repens, 69, 70, 71
  reticulata, 68
  retusa, 66
  rosmarinifolia, 71
  rupestris, 78
  rubra, 58
  Russelliana, 60
  Smithiana, 79
  sphacelata, 78
  stipularis, 75
  Stuartiana, 69
  tenuifolia, 65
  triandra, [illegible]
  vacciniifolia, 66
  venulosa, 66
  viminalis, 76
  vitellina, 64
SAXIFRAGA, 527
  affinis, 535

SAXIFRAGA.
aizoides, 530
autumnalis, 531
cæspitosa, 533
cæspitosa, 533
cernua, 532
decipiens, 534
elongella, 534
Geum, 529
granulata, 531
Groenlandica, 534
hirculus, 530
hirta, 534
hypnoides, 534
læte-virens, 534
moschata, 533
muscoides, 533
nivalis, 528
oppositifolia, 529
palmata, 534
petræa, 534
platypetala, 535
pedatifida, 535
punctata, 529
Pyrenaica, 533
quinquefida, 536
rivularis, 532
stellaris, 527
tridactylites, 532
tridact. Groen. &c., 534
umbrosa, 528

SCABIOSA, 21
arvensis, 218
columbaria
succisa, 21

SCANDIX, 387
Anthriscus, 388
Cerefolium, 388
odorata, 390
pecten, 387
Pecten Veneris, 387

SCHŒNUS, 107
albus, 109
albus, 109
fuscus, 109
mariscus, 82
monoicus, 139
nigricans, 10

SCHEUCHZERIA
palustris, 459

Schistostega pennata, 1039
Schollera oxycoccus, 4[illegible]0

SCILLA, 428
autumnalis, 428
bifolia, 429
nutans, 429
verna, 429

SCIRPUS, 101
acicularis, 106
cæspitosus, 101
Caricis, 108
carinatus, 103
ferrugineus, 108
fluitans, 102
glaucus, 103
holoschœnus, 103
lacustris, 102
maritimus, 104
palustris, 105
pauciflorus, 101
romanus, 103
rufus, 108
setaceus, 103
sylvaticus, 104
triqueter, 103

SCLERANTHUS, 536
annuus, 536
perennis, 536
Scolopendrium Cete
vulgare, 986

SCROPHULARIA, 73
aquatica, 738
nodosa 738
Scorodonia, 737
vernalis, 739

SCUTELLARIA, 724
galericulata, 724
minor, 724

SEDUM, 556
acre, 558
album, 557
anglicum, 559
dasyphyllum, 559
Forsterianum, 560
glaucum, 560
minus teretifol., &c., 558
reflexum, 559
rubens, 559
rupestre, 560
sexangulare, 558
telephium, 556
villosum, 557

ELINUM, 371
palustre, 372
sylvestre, 372

SEMPERVIVUM, 590
tectorum, 590
SENECIO, 935
aquaticus, 939
erucifolius, 938
Jacobæa, 938
Jacobæa γ, 939
lividus, 937
paludosus, 939
Saracenicus, 939
squalidus, 937
sylvaticus, 936
tenuifolius, 937
viscosus, 936
viscosus, β, 936
vulgaris, 935
Senebiera Coronopus, 765
didyma, 765
pinnatifida, 765
SERAPIAS, 45
ensifolia, 46
grandiflora, 47
lancifolia, 47
latifolia, 45
longifolia, 46
palustris, 46
rubra, 47
SERRATULA, 906
alpina, 907
arvensis, 911
tinctoria, 907
Seseli Meum, 393
SESLERIA, 164
cœrulea, 164
SHERARDIA, 219
arvensis, 219
SIBBALDIA, 409
procumbens, 409
SIBTHORPIA, 742
Europæa, 742
SILENE, 541
acaulis, 546
amœna, 544
Anglica, 542
Anglica, 543
Armeria, 545
conica, 545
inflata, 544
maritima, 544
noctiflora, 545
nutans, 543
nutans β, 543
Otites, 542
SILENE
paradoxa, 543
quinque-vulnera, 542
uniflora, 544
SINAPIS, 785
alba, 785, 792
arvensis, 785, 792
muralis, 787, 793
nigra, 785, 793
tenuifolia, 785, 793
SISON, 380
amomum, 380
aquatica, 384
peucedanifolia, 383
Phellandrium, 384
inundatum, 381
segetum, 380
verticillatum, 381
SISYMBRIUM, 772
amphibium, 772
amphib. palustre, 772
Irio, 792
Monensis, 785
murale, 788
muralis, 788
Nasturtium, 771
officinale, 792, 772
palustre, 772
Sophia, 792
sylvestre, 771
tenuifol., 787
terrestre, 772
SIUM, 378
angustifolium, 379
latifolium, 378
nodiflorum, 379
repens, 379
inundatum, 381
SMYRNIUM, 392
olusatrum, 392
SOLANUM, 318
dulcamara, 318
lethale, 318
nigrum, 319
SOLIDAGO, 941
Cambrica, 942
Lapponica, 942
virgaurea, 941
virgaurea β, 942
virga-aurea, 942
SONCHUS, 882
alpinus, 882
arvensis, 883
cæruleus, 882

SONCHUS
cæruleus latifol., 882
Canadensis, 882
oleraceus, 884
palustris, 883
Sorbus aria, 608
aucuparia, 606
domestica, 605
hybrida, 607
torminalis, 605
SPARGANIUM, 140
erectum, 141
natans, 141
ramosum, 140
simplex, 141
simp. nat. 141
SPARTIUM, 826
scoparium, 827
SPARTINA, 176
stricta, 176
Sphæria Coryli, 494
Prunastri, 595
punctiformis, 510
Quercina, 510
sulcata, 81
Xylomoides, 353
Sphærocarpos terrestris, 1098
SPERGULA, 567
arvense, 567
arvensis β, 568
laricina, 568
marit., &c. 552
nodosa, 568
pentandra, 56[illegible]
procumbens β,
saginoides, 569
saginoides, 5[illegible]
subulata, 568
SPHAGNUM, 1004
acutifolium, 1004
alpinum, 1004
arboreum, 1005
arboreum, 1010
capillifolium, 1004
latifolium, 1004
obtusifolium, 1004
palustre, 1004
SPIRÆA, 608
filipendula, 609
salicifolia, 608
ulmaria, 609
SPLACHNUM, 101
ampullaceum, 101
acutifolia, 1012
SPLACHNUM
angustatum, 1012
Brewerianum, 1013
fastigiatum, 1013
Frælichianum, 1014
Frælichianum, 1039
gracile, 1011, 1012
lingulatum, 1014
Mnioides, 1013
ovatum, 1013
ovatum, 1011
purpureum, 1013
reticulatum, 1039
rugosum, 1011
saggitifolium, 1012
sphæricum, 1011
tenue, 1013
Turnerianum, 1012
urceolatum, 1013
vasculosum, 1011
Sporatrichum macrosporum, 590
STACHYS, 714
ambigua, 714
arvensis, 715
Germanica, 716
palustris, 715
sylvatica, 714
STAPHYLEA, 402
pinnata, 402
STATICE, 405
Armeria, 405
cordata, 40[illegible]
limonium, 405
reticulata, 406
[illegible]ELLARIA, 546
Alsine, 550
aquat., *med.*, 550
Cerastoides, 550
Dilleniana, 550
[illegible]ntana, 550
glauca, 549
graminea, 549
graminea γ, 550
β, 550
Holostea, 547
media, 547
media, 549
nemorum, 546
scapigera, 549
uliginosa, 550
Stilbospora profusa, 577
STIPA, 192
pennata, 192

STRATIOTES, 667
aloides, 668
SUBULARIA, 754
aquatica, 754, 790
Swartzia capillacea, 1049
inclinata, 1052
SWERTIA, 357
perennis, 357
SYMPHYTUM, 283
officinale, 284
patens, 284
tuberosum, 284
Syntrichia ruralis, 1052

T

TAMARIX, 403
Gallica, 403
TAMUS, 437
communis, 137
TANACETUM, 920
vulgare, 920
TARGIONIA, 1098
hypophylla, 1098
sphærocarpus, 1098
TAXUS, 811
baccata, 811
TEESDALIA, 765
nudicaulis, 765, 790
Tetraphis pellucida, 1019
TEUCRIUM, 694
chamædrys, 694
Chamæpitys, 693
Scorodonia, 694
scordium, 695
THALICTRUM, 674
alpinum, 674
flavum, 674
majus, 675
majus, 675
minus, 675
Thelephora Sambuci, 402
THESIUM, 340
linophyllum, 310
THLASPI, 759
alpestre, 768, 789
alpestre, 760
Anglica, 768
arvense, 759, 789
Bursa-pastoris, 760, 78
campestre, 758, 759
fol. Globulariæ, 760
THLASPI
hederaceum, 763
hirtum, 759
montanum, 760
perfoliatum, 759, 789
perfol. minus, 760
Vaccariæ fol. glab., 758
TRIENTALIS, 466
Europæa, 466
TRIFOLIUM, 851
agrarium, 961
alpestre, 857
arvense, 856
corniculat. min. pilos., 586
dubium, 861
filiforme, 861
flexuosum, 857
fragiferum, 860
glomeratum, 855
hybridum, 854
maritimum, 860
medium, 857
minus, 861
ochroleucum, 859
officinale, 852
ornithopodioides, 852
pratense, 857
pratense hirsut. maj. &c., 85
procumbens, 861
procumbens, 861
repens, 853
repens hybridum, 854
scabrum, [illegible]
squarrosum, 859
stellatum, 860
stellatum, 86
striatum, 856
subterraneum, 854
suffocatum, 86
TRIGLOCHIN, 460
maritimum, 460
palustre, 160
Trigonella, 852
TRIODIA, 174
decumbens, 174
TRITICUM, 205
caninum, 206
cristatum, 208
junceum, 205
loliaceum, 206
repens, 205
TROLLIUS, 685
Europæus, 685

TULIPA, 425
sylvestris, 425
TURRITIS, 781
alpina, 780
ciliata, 780
glabra, 781, 791
TUSSILAGO, 933
Farfara, 933
hybrida, 934
Petasites, 934
TYPHA, 139
angustifolia, 140
latifolia, 139
minor, 140
Thrincia hirta, 890
THYMUS, 719
Acinos, 721
Calamintha, 722
Nepeta, 722
serpyllum, 719
TILIA, 654
corallina, 658
cordata, 656
Europæa, 654
grandifolia, 658
microphylla, 657
parvifolia, 657
TILLÆA, 209
muscosa, 209
Tithymalus platyphyllus, 588
verrucosus, 588
TOFIELDIA, 459
palustris, 459
TORDYLIUM, 364
anthriscus, 366
maximum, 364
nodosum, 36[illegible]
officinale, 364
TORMENTILLA, 636
erecta, 636
officinalis, 636
reptans, 63[illegible]
TORILIS, 366
anthriscus, 366
infesta, 266
nodosa, 367
Tortula apiculata, 1047
aristata, 1047
barbata, 1043, 1047
brevifolia, 1048
convoluta, 1035
cuneifolia, 1130
Tortula
fallax, 1050
gracilis, 1018
humilis, 1047
imberbis, 1017, 1050
muralis, 1031
rigida, 1033
ruralis, 1052
stellata, 1032
subulata, 1049
tortuosa, 1047
unguiculata, 1047, 1050
TRAGOPOGON, 880
pratensis, 880
porrifolius, 880
Tremella Urticæ, 239
TRICHOMANES, 1002
alatum, 1003
brevisetum, 10[illegible]3
pyxidiferum, 1003
Tunbridgense, 1002
Trichostomum aciculare, 1019
canescens, 1013
capillaceum, 1049
cirratum, 1043
Ericoides, 1013
fasciculare, 1038
flexifolium, 1035
[illegible]uloides, 1008
lanuginosum, 1038
lineare, [illegible]
[illegible]ioides, 1042, 1045
obtusum, 1039, 1041
papillosum, 1023
patens, 1041
polyphyllum, 1043
pusillum, 1032
undulatum, 1053
trifarium, 1014

U

ULEX, 830
Europæus, 830
Europæus β, 832
minor, 832
nanus, 831
ULMUS, 352
campestris, 353
effusa, 357
glabra, 355
montana, 356

ULMUS
montana β., 355
suberosa, 355
Ulva Plantaginea, 669
Uredo Euphorbiæ, 586
Fragariæ, 632
frumenti, 207
Geranii, 805
Menthæ, 702
Populi, 486
Sonchi, 884
suaveolens, 912
Thlaspi, 761
URTICA, 237
dioica, 237
pilulifera, 239
urens, 239
UTRICULARIA, 23
intermedia, 24
minor, 24
vulgaris, 23

V

VACCINIUM, 477
myrtillus, 477
oxycoccus, 479
uliginosum, 478
vitis-idæa, 478
Valantia cruciata, 231
aparine, 228
VALERIANA, 88
dentata, 91
dentata, 91
dioica, 89
locusta, 91
officinalis, 89
olitoria, 91
Pyrenaica, 90
rubra, 88
VELLA, 753
annua, 754, 789
VERBASCUM, 311
B. lut. fol. long., &c., 314
lut. maj., &c., 314
maj. fl., 314
blattaria, 314
lychnitis, 312
lychnitis, var., 313
nigro-lychnitis, 312
nigrum, 313
phœniceum, 315
VERBASCUM
pulverulentum, 312
thapsus, 311
thapsoides, 312
thapso-nigrum, 311
virgatum, 314
VERBENA, 696
officinalis, 696
VERONICA, 15
agrestis, 21
alpina, 17
anagallis, 19
arvensis, 15
beccabunga, 18
chamædrys, 20
frutescens, 17
fruticulosa, 17
hybrida, 15
montana, 20
officinalis, 16
saxatilis, 18
scutellata, 19
serpyllifolia, 18
spicata, 15
verna, 16
hederifolia, 21
triphyllos, 21
VIBURNUM 398
lantana. 398
opulus, 399
VICIA, 841
angustifolia, 844
bithynica, 846
cracca, 842
hybrida, 845
lævigata, 846
lythyroides 845
lathyroides β, 844
lathyroides γ, 845
lutea, 845
sativa, 843
sativa, α, 844
sepium, 844
sylvatica, 841
Villarsia nymphoides, 292
VINCA, 341
major, 341
minor, 341
pervinca herb. semp. viv. 34
VIOLA, 325
amœna, 331
canina, 326
flavicornis, 329

VIOLA
  grandiflora, 331
  hirta, 325
  lactea, 329
  lutea, 331
  odorata 325
  palustris, 327
  tricolor, 329
VISCUM, 240
  album, 240
  Quercus, 242

W

Webera pyriforme, 1054
  nutans, 1055
Weissia acuta, 1041
  calcarea, 1032
  cirrata, 1042, 1044
  controversa, 1036
  heteromalla, 1045
  nigrita, 1056
  pusilla, 1033
Weissia
  recurvata, 1054
  recurvirostra, 1046
  Splachnoides, 1014
  verticillata, 1040
Woodsia hyperborea, 994
  Ilvensis, 994

X

XANTHIUM, 360
  strumarium, 360
Xyloma Alneum, 215
  rubrum, 595
  Ulmi, 353

Z

ZANNICHELLIA
  palustris, 8
ZOSTERA, 668
  marina, 668

END OF VOL. III.

CLASS XII.

ICOSANDRIA.

MONOGYNIA.

PRU'NUS. *Cal.* beneath, five-cleft: *Bloss.* five petals: *Drupa* with an entire nut.

[Cratægus.]

DIGYNIA.

CRATÆ'GUS. *Cal.* superior, five-cleft: *Bloss.* five petals: *Berry* (only dimpled, E.) two-seeded.

[Prunus insititia.]

PENTAGYNIA.

MES'PILUS. *Cal.* superior, five-cleft: *Bloss.* five petals: (*Apple* (*Pomum*) five-seeded, deeply concave at the top. E.)

PY'RUS. *Cal.* superior, five-cleft: *Bloss.* five petals: (*Fruit* a *Pomum,* with two to five (generally two-seeded) cells. E.)

SPIRÆ'A. *Cal.* beneath, five-cleft: *Bloss.* five petals: *Pericarps* three to twelve, one-celled, two-valved: *Seeds* one to three in each cell. E.)

POLYGYNIA.

RO'SA. *Cal.* five-cleft: *Bloss.* five petals: *Calyx* contracting so as to form a fleshy, many-seeded ber

RUBUS. *Cal.* five-cleft: *Bloss.* five petals: *Berry* superior, compound (granules single-seeded. E.)

TORMENT[illegible] *Cal:* eight-cleft: *Bloss.* four petals: *Seeds* [illegible] eight, [illegible]ss.

DRY'AS. *Cal.* five to ten-cleft: *Bloss.* five to eight petals: *Seeds* many, with feathery awns.

FRAGA'RIA. *Cal.* ten-cleft: *Bloss.* five petals: *Seeds* many, deciduous, smooth, placed on a berry-like receptacle.

POTENTIL'LA. *Cal.* ten-cleft: *Bloss.* five petals: (*Seeds* many, beardless, rugose. E.)

GE'UM. *Cal.* ten-cleft: *Bloss.* five petals: *Seeds* many, with a jointed awn.

CO'MARUM. *Cal.* ten-cleft: *Bloss.* five petals: *Seeds* many permanent, upon a fleshy, globular, villous receptacle.

[Spiræa. Sempervivum tectorum.]

MONOGYNIA.

PRU'NUS.* *Calyx* five-cleft, beneath: *Petals* five: *Drupa* one-celled, closed at top: *Nut* with prominent seams.

P. PADUS. Flowers in pendulous bunches: leaves deciduous, with two glands at the base on the under side.

(*E. Bot.* 1383. *Fl. Dan.* 205—*Ger.* 1322. 9—*Park.* 777. 1—*Ger. Em.* 1501. 9—*J. B.* i. *a.* 228—*Lob. Obs.* 593. 2—*Park.* 1517. 3

(A small tree, with smooth bark. E.) *Calyx* [illegible], within at the bottom beset with numerous woolly hairs. *Petals* serrated. *Stamens* twenty-five. (*Leaves* alternate, on leaf-stalks, inversely egg-shaped, sharp-pointed, serrated, veined, smooth, slightly [illegible], smelling somewhat like Rue. *Bunches* solitary, simple, many-flowered, leafy at the base. *Flowers* white. *Fruit* black, nauseous. [illegible] But. Stone of the *drupa* rugose, answering the characters of *Amygdalus*, not smooth as in *Prunus*; thus confirming the assertion of Gærtner, that no solid character exists between these two genera. E. Bot. E.)

Bird Cherry. (In Scotland **Hog Cherry.** E.) Woods and hedges in the northern counties. In a lane between Temple Mills and Epping Forest. About Ingleborough, Yorkshire. Curtis. Woods in Norfolk, common. Mr. Woodward. Hedges at Pendeford, Stafford. Mr. Pitt. Woods by the Tees. Mr. Robson. A few miles north of Manchester, very common in woods and hedges. Mr. Caley. (All along the banks of the Dee. Mr.

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* (Said to be a word of Asiatic origin [illegible] supposed to signify the wild Plum. E.)

Anderson. In every wood near Keswick, and in Ennerdale. Mr. Winch. Arniston woods, near Edinburgh. Dr. Greville. But no where with more pleasing effect than in the romantic Dovedale, does—

"The light *Bird Cherry* hangs its flag,
In snowy splendour from the crag." E.)

T. May.*

P. CER'ASUS. Umbels mostly on short fruit-stalks; leaves egg-spear-shaped, smooth, plicate: (slightly downy beneath. E.)

(*E. Bot.* 706. E.)—*Sheldr.* 54. 1 *and* 6—*Hunt. Evel.* 188. 1. *p.* 181. *Ed.* ii. —*Blackw.* 449—*Matth.* 233 *and* 235—*Dod.* 808. 1—*Ger.* 1502. 1—*Ger.* 1319. 1—*Fuchs.* 425—*J. B.* i. *a.* 220—*Trag.* 1026—*Lonic.* i. 13. 2.

(A moderate sized tree with smooth, greyish, horizontally splitting bark. E.) *Leaf-scales* toothed. *Floral-leaves* three-cleft, serrated; the intermediate one leafy. The terminal *buds* producing leaves, the lateral ones flowers, which are from the last year's shoots. *Blossoms* white. *Fruit* red. Linn. (*Leaves* on leaf-stalks, sharp-pointed, unequally serrated, veined; the younger ones more or less pubescent. *Calyx* reflexed. *Nut* hard, smooth. Fl. Brit. E.)

WILD CHERRY-TREE. (GREEN TREE, in Scotland. Irish: *Cran silin.* Welsh: *Ceriosen.* S. W. *Sirianen.* N. W. E.) Woods and hedges not uncommon. (In Hertfordshire growing to a large size. Mr. Woodward. Many fine trees of this sort grow at Whixley, near Wetherby. Dr. Hunter. E.)

T. May.†

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* The Bird Cherry grows well in woods, groves, or fields, but not in a moist soil. It bears lopping and suffers the grass to grow under it. The fruit is nauseous: but bruised, and infused in wine or brandy, it imparts an agreeable flavour. (Dr. Clarke says, the Swedes flavour their distilled spirits with the blossoms. E.) A strong decoction of the bark is used by the Finlanders to cure syphilitic complaints; which practice is corroborated by the testimony of M. Broerland in the Stockh Tr. He directs six ounces of the dry, or eight of the fresh bark, to be boiled in eight to four pints of water. The dose is four ounces, four times a day. —It alone cures the slighter infections, and combined with Mercury facilitates the cure of the severer states of the disease. Venel. A decoction of the berries is sometimes given with success in dysentery. The wood being smooth and tough is made into handles for knives, and whips, (and is used in cabinet work. The twigs are tough and pliant, and serviceable for withs. E.) Sheep, goats, and swine eat it. Cows are not fond of it. Horses refuse it. (*Erineum Padi*, Grev. Scot. Crypt. 157. 1; "in distinct roundish patches, whitish when young, changing to orange and deep brown," may be observed on the leaves. E.)

† (In France the Wild Cherry-tree is admitted as an ornament to avenues and parks; but, though it will attain to considerable height, and is attractive when in full blossom, it can be deemed little more than the beauty of a day. The double-blossomed, (of which dwarfs may be procured), and the red-flowering varieties, have strong claims to admittance into the shrubbery; especially the former, whose multiplicate and snow-white petals, displayed on long, slender footstalks, obtain universal admiration. E.) The Cherry-tree loves a sandy soil, and an elevated situation. The gum that exudes from this tree is equal to gum arabic, (obtained from certain species of Acacia) though differing in chemical qualities. E.) Hasselquist relates, that more than one hundred men, during a siege, were kept alive for nearly two months, without any other sustenance than a little of this gum taken into the mouth sometimes, and suffered gradually to dissolve. (To produce an effect so surprising, we must suppose it to operate in a two-fold manner,—both by lubricating the coats of the stomach and obtunding the inordinate action of the gastric fluid, as also, though perhaps in a secondary degree, by its nutritive quality; in which it would appear even to approach animal gluten, which yields so extraordinary a degree of support in the form of portable soup, or cavalry balls, and experienced in the late campaigns. (It is remarkable that the barks of all the trees which furnish this bland mucilaginous substance are highly astringent; that of the Acacia itself is used in India for tanning; and in our country the Cherry and Plum trees, which also yield gum, have astringent barks." Edin. Dispens. The fruit,

(Var. 2. *Fructu nigro.* Fruit black. The hairiness on the under surface of the leaf proves too variable to constitute a specific distinction. E.)

Ludw. 108—*Blackw.* 425—*Sheldr.* 54. 5—*Ger.* 1323. 11.

BLACK CHERRY. MAZZARDS. CARRONS, CARONE, or CROWN, in Hertfordshire, when cultivated. In some southern counties, Wild Cherries are likewise called *Merries*, from the French *Merise.* Welsh: *Ceriosen, Siria*[illegible]. *P. avium.* Linn. With, &c. *P. Cerasus δ.* Sm. *P. nigra.* Ehrh. *Cerasus sylvestris, fructu nigro.* Ray. *C. nigra.* Ger. Em. E.)

P. DOMES'TICA. Fruit-stalks mostly solitary: leaves spear-egg-shaped, convolute when young: branches thornless.

(*E. Bot.* 1783. E.)—*Woodv.* 85—*Park.* 1512. 1—*Ger.* 1311. 1—*Matth.* 265—*Lonic.* i. 52. 1—*Fuchs.* 403—*Trag.* 1019—*Dod.* 805—*Lob. Obs.* 595. 2—*Ger. Em.* 1497. 1.

(A moderate-sized tree. E.) *Leaves*, when expanding from the bud, coiled. *Flowering-buds* producing no leaves. Linn. *Calyx* sometimes six-cleft. *Style* crooked. (*Leaves* on short foot-stalks, serrated, smooth, the younger ones pubescent beneath. *Petals* white, inversely egg-shaped. *Fruit* large, black, with a fine bloom, elliptical. Fl. Brit. E.)

WILD PLUM-TREE. (Welsh: *Eirinen; Eirin-bren.* *P. communis domestica.* Huds. *P. gallica*; (the fruit.) Pharm. Lond. Hedges, and similar situations, though perhaps rarely found in a perfectly native state. E.)

T. April.*

(though inferior), may be eaten either fresh or dried, and it is frequently infused in brandy for the sake of its flavour. The wood is hard and tough. It is used by the turner, and is formed into chairs and hoops, and stained to imitate mahogany, (to which valuable wood, both in grain and colour, it approaches nearer than any other of this country. E.) This tree is the original stock from which the cultivated kinds are derived, (which, however agreeable to the palate, if taken in large quantities, are apt to prove indigestible. The finer sorts were first introduced into Kent from Flanders, temp. Hen. VIII.—Mr. Brinkley observes—"the eatable part of the cherry, (or other stone fruit), first serves the purposes of perfecting the seed or kernel, by means of vessels passing through the stone. After the kernel is perfected, the stone becomes hard, and the vessels cease their functions. But the substance surrounding the stone is not then thrown away as useless. That which was before only an instrument for perfecting the kernel, now receives and retains to itself the whole of the sun's influence, and thereby becomes a grateful food to man. Also what an evident mark of design is the stone protecting the kernel. The intervention of the stone prevents the second use from interfering with the first." And since we cannot but admit with the judicious Paley, that "arrangement, disposition of parts, subserviency of means to an end, relation of instruments to a use, imply the presence of intelligence and mind;" as an occupation worthy of the utmost attention of rational, though [illegible] beings,

"Each secret spring, each organ let us trace,
That mock the proudest art of human race."

A parasitic fungus of doubtful genus, (according to Purton), having some affinity to Peziza, to Sphæria, and to Clavaria, (*Peziza Cerasi*, of Persoon), is found very common on the dead branches of the wild Cherry tree. "At first it is externally black—afterwards bursting, exhibits a paler colour beneath." *Livia Cerasi* may be detected on this tree. E.)

* The Wild Plum-tree loves a lofty exposure, and is less injurious to pasturage than many other trees. The varieties have probably originated from the red and white cultivated plum, either sown by design or accident. The garden plums are derived from this species, at first raised from the stones, but afterwards preserved by budding and grafting on any plum-stock. Cotton may be died of a rose colour by the juice of the wild fruit, combined with muriatic or sulphuric acid. E.) The bark dyes yellow. (*Livia Pruni* may be observed upon this tree. E.)

P. insiti'tia. Fruit-stalks in pairs: leaves egg-shaped, slightly pubescent beneath, convolute: branches ending in a spine.

E. Bot. 841.

Stipulæ cloven to the base. *Calyx,* its outer skin may be pulled off, adhering to the fruit-stalk, and appearing like an outer cap. *Flowers* white; larger than those of *P. domestica.* *Style* straight. (*Fruit* black, with a bluish bloom; sometimes the colour of bee-wax-[illegible]. In our climate this tree does not attain the size of *P. domestica.* *Berry* roundish, austere. E.)

Bullace Tree. (Irish: *Droihean.* Welsh: *Eirinen Bulas.* E.) Hedges. T. April.*

P. spino'sa. Fruit-stalks solitary: leaves spear-shaped, smooth: branches thorny.

Fl. Dan. 926—(*E. Bot.* 842. E.)—*Sheldr.* 73—*Woodv.* 84—*Fuchs.* 404—*Trag.* 1016—*J. B.* i. a. 193—*Lonic.* i. 51—*Blackw.* 491—*Matth.* 266—*Dod.* 753. 2—*Lob. Obs.* 595. 1—*Ger. Em.* 1497. 5—*Park.* 1033—*Ger.* 1313. 1. 2.

Styles sometimes two. St. (A bushy, rigid, spinous shrub, with dark-coloured bark; considerably smaller than the last; *flowers* white, more decidedly preceding the *leaves,* which are scarcely an inch long. *Fruit* a black, roundish, austere berry. E.)

Black-thorn. Sloe-tree. (Irish: *Airn.* Welsh: *Draenen ddû; Eirin-berth.* Gaelic: *An-[illegible]oighionn, preas-nan-airneag.* *P. sylvestris,* the fruit; Pharm. Lond. E.) Hedges. S. March—April.†

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* The fruit is acid, but so tempered by a sweetness and roughness as not to be unpleasant, particularly after having been mellowed by frosts. A conserve is prepared by mixing the pulp with thrice its weight of sugar. The bark of the roots and branches is considerably styptic. An infusion of the flowers, sweetened with sugar, is an aperient, not improper for children.

† This species is not well adapted to grow in hedges, because it spreads its roots wide, and encroaches upon the pasturage; but it makes a good dead fence. The wood is hard and tough, and is formed into teeth for rakes, and walking sticks. From some effects which I have repeatedly observed to follow the prick of the thorns, I have reason to believe there is something poisonous in them, particularly in autumn. The tender leaves dried afford the best substitute for tea that has yet been tried. The fruit,

(———— "*Sloes* austere,
Hard fare! but such as boyish appetite
Disdains not:" E.)

bruised and put into wine gives it a beautiful red colour, and a pleasant subacid roughness. (It is believed to be a common ingredient in (British) Port-wine. E.) An infusion of a handful of the flowers is a safe cathartic. The bark powdered, in doses of two drams, will cure some agues. Letters written upon linen or woollen with the juice of the fruit will not wash out. Sheep, goats, and horses eat the leaves. The different species of *Prunus* furnish nourishment to the *Papilio Cratægi, Polychloros,* and *Betulæ; Phalæna quercifolia, quercus, lanestris, cæruleocephala, pavonia, neustria, Oxyacanthæ, Citrago, prunaria,* and *brumata; Aphis padi; Curculio Cerasi,* and *Pruni:* and *Scarabæus horticola.*—*Puccinea Pruni* will frequently be found scattered in minute yellow spots, on the under side of the leaves, especially during autumn: *Xyloma rubrum,* "roundish, red, changing to dark brown," Grev. Scot. Crypt. 120: Pu.[illegible]. t. 33. protrudes the substance to both sides: and *Sphæria Prunastri,* "ventricose, mouths spinulose, bursting through the bark, four-sided;" may be observed on the decaying branches about the month of April. Unless to the observant eye of the naturalist, ever alive to each indication of returning Spring, conspicu-

DIGYNIA.

CRATÆ'GUS. *Cal.* five-cleft: *Petals* five: *Berry* beneath, (only dimpled, E.) one-celled, two-seeded.

C. OXYACAN'THA. (Thorny: leaves smooth, mostly three-cleft: segments blunt, serrated: flowers corymbose. E.)

Jacq. Austr. 292. 2—(*E. Bot.* 2504. E.)—*Matth.* 163—*Blackw.* 149. 2—*J. B.* i. *b.* 49—*Fl. Dan.* 634.

(A small bushy tree, with smooth bark and hard wood. E.) All the varieties are found in our hedge rows; that with one pistil is the most common; that with three the most rare. (*Branches* smooth, stiff, spinous. E.) *Flowers* white, but in clayey soils pinky red, (highly fragrant. E.) *Berries* mostly a coral red, but sometimes yellow, or white. *Leaves* glossy, the segments more or less blunt or acute, serrated upwards, but entire at the base; the middle segment three-cleft. *Capsules* mostly single-seeded, but sometimes there is a second cell, and the rudiment of a second seed.

Var. 2. *Monogyna.* Flowers with one pistil; leaves, segments more acute and expanding.

Jacq. Austr. 2. 1—(*Fl. Dan.* 1162. E.)—*Sheldr.* 21—*Barr.* 563—*Clus.* i. 121—*Lob. Obs.* 14. 2—*Park.* 1025—*Walc.*—*Blackw.* 149. 1—*Trag.* 984—*Ger.* 1146. 1—*Dod.* 751. 1—*Ger. Em.* 1327. 1.

Var. 3. *Trigyna.* Flowers with three pistils.

Hunt.—*Evel.* 398. ii. *p.* 92. *Ed.* 2*d.*

Var. 4. (*Glastonburiensis.* E.) *Glastonbury Thorn.* Appendages at the base of the leaves kidney-shaped, toothed, very large.

In a lane beyond the church-yard on the opposite side of the street near a pit grows a very old tree. A woman ninety years of age never remembers it otherwise than as it now appears. Another tree of the same kind may be seen two or three miles from Glastonbury. It has been reported to have no thorns, but that I found to be a mistake; it has thorns, like other Hawthorns, but which likewise on aged trees are but few. There is also a full sized tree of this kind in the garden at Piper's Inn. This variety blossoms twice a year; the winter blossoms, which are about the size of a sixpence, appear about Christmas, (it may

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but as may be this primaveral ensign amidst leafless and dark associates, it attracts but little notice. Mr. Howitt has however described its peculiarities in verse:—

“ The April air is shrewd and keen,
No leaf has dared unfold,
Yet thy white blossom's radiant sheen,
Spring's banner, I behold.
Though all beside be dead and drear,
Undauntedly thy flowers appear.”.

Nor does even this ordinary and neglected little tree fail to yield its moral to the reflecting mind; the caduceous character of the petals, which fall in showers with the slightest agitation, offering a fit emblem of that premature decay, so often observable in

“ Youth—the vision of a morn,
That flies the coming day:
It is the blossom of the *Thorn*
Which rude winds sweep away.” Cunningham. E.)

occasionally happen on the precise day, as recorded in the legend, E.) but sometimes sooner. These produce no fruit. The berries contain only one seed, and there seemed only to have been one pistil, but it was late in the season when I examined it, (Oct. 1792). I was informed that the berries when sown produce plants nowise differing from the common Hawthorn. Probably the tree which gave birth to the tradition (of its having sprung originally from the staff of Joseph of Arimathea, who, with his missionary companions, resolving there to found the first Christian church in this land, stuck it into the ground, when it quickly put forth branches and blossoms. E.) grew within the walls of the abbey, and may have died from age, or been destroyed at the time of the Reformation.*

WHITE-THORN. HAW-THORN. MAY. (QUICK, or QUICK-SET. Welsh: *Dracnen-wen; Yspyddaden.* Gaelic: *Ansgitheach. C. Oxyacantha.* Linn. and most authors. *Mespilus Oxyacantha.* Gært. Sm. E.) Hedges, woods, and old parks. (With *white* berries, near Bampton, Oxfordshire. E.) T. May—June.†

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* (However that may have been, the existence of this *lusus naturæ*, (to which some few other instances approximate, vid. *Quercus*), is unquestionable, and proved to be something more than what Dr. Hunter apprehended, "a sanctified deceit, sunk into discredit even with the meanest of the vulgar." Sylv. i. 178. We therefore, in addition to the particulars given by our author of this extraordinary, though not miraculous thorn, nearly forty years ago, insert a few selected from the "History of the Abbey of Glast.," 4to. 1826, by the Rev. R. Warner, F. A. S. who has ably illustrated the interesting remains of that superb monastic establishment,

"Where pendent ivy ill supplies
With perishable gloom
Those rays that, rich in varying dyes,
Gleam'd o'er a martyr's tomb."

"Since Dr. Withering's time," observes Mr. Warner, "the *Holy Thorn* has been introduced into many parts; and is now found in various gardens of Glastonbury and its vicinity. Pilgrimages continued to be made to this wonderful tree, even in Mr. Eyston's time;" (ob. 1721). "and its scions were sought for with the greatest avidity, both by the pious of the Romish Church, and the superstitious of other systems of faith, till within these eighty years."—London Evening Post, Jan. 1753: "A vast concourse of people attended the noted thorn on Christmas-day, new style; but, to their great disappointment, there was no appearance of its blowing, which made them watch it narrowly till the fifth of January, the Christmas-day, old style, when it blowed as usual." Strype records one of Hen. VIII.'s "Visiters" having at the spoliation of the Abbey, sent up with various relicks, (in 1536), "First, two flowers, wrapped in white and black sarcenet, that on Christenmass even, *horâ ipsâ quâ Christus natus fuerat*, will spring, and burgen, and bare blossomes." A later authority states; "in a word, the blossoms of this tree were such curiosities beyond seas, that the Bristol merchants carried them into foreign parts."—According to some writers the spot on which St. Joseph originally planted his staff, and where the wonderful thorn stood, and successors of the same peculiar kind were for centuries, by grafts or buds, preserved, until the political commotions in the reign of Charles I, when the tree, being considered a relic of Papistry, was nearly destroyed by a puritan soldier (who lost his own life by a splinter in the impious attempt), was on the south ridge of Weary-all-Hill, at present called Werrall Park. About the year 1740, the stump or root was to be seen, but nothing now (Avalonian Guide, 1818), remains, except grafts from it growing in different places. the oldest of them stands near St John's Church-yard at Glastonbury, and is a large tree which continues to blossom twice a year." E.)

† On account of the stiffness of its branches, the sharpness of its thorns, its roots not spreading wide, and its capability of bearing the severest winters without injury, Hawthorn is universally preferred for making hedges, whether to clip or to grow at large. (The bark, with copperas, is used by the Highlanders to dye black; and without, yellow. In

PENTAGYNIA.

MESPILUS.* *Cal.* five-cleft: *Petals* five: (*Apple* deeply concave at the top, one, two, or five-celled. E.)

Kamschatka the haws are fermented into wine. It often happens that during the spring months, Hawthorn hedges suffer so severely from the ravages of insects, (combined with other less understood causes of blight), that the leaves are entirely consumed; the hedges presenting, for a long extent, the appearance of winter sprays, covered only with a cottony web. Of the caterpillars engaged in this denuding process, the principal performers have been found to be the larvæ of the little Ermine Moths *Phalæna Evonymella*, and *P. Padella*. E.) The wood is hard and tough, and is formed into axle-trees and handles for tools: (is good for the turner's use; combs were formerly made from the root. The seed of the Hawthorn seldom vegetates till the second year; but if turkeys be fed with these haws, and their *egesta* be planted in drills, the young plants appear above ground the first year: a fact from which it might not unreasonably be inferred that by the timely application of stimulating manure a crop may be raised the first season. Evelyn has the following curious remarks on this subject. "The haw, and many other seeds, being invested with a very hard integument, will now and then suffer imprisonment two whole years under the earth; and our impatience at this does often frustrate the resurrection of divers seeds of this nature; and thus will the seed of hollies, (concerning which there goes a tradition, that they will not sprout till they be passed through the maw of a thrush), sleep two entire years in their graves: also sometimes yew and sloe." But the same accurate authority further observes that the vegetation of such seeds may be ensured and expedited by being "washed, then buried and dried in sand a little moist, any time in December, and so kept in some vessel in the house all winter, and in some cool shady place abroad all summer; sow them the spring after:" thus ensuring the best of all fences, the

"Tutela naturalis et viva." Varro.

The different species of Cratægus afford nourishment to *Papilio Cratægi*; (*Arctia chrysorrhœa*, *A. phæorrhœa*, *Noctua Oxyacanthæ*, *Curculio nitens*, *Pyrochroa rubens*, *Elodes pallida*, *Byturus tomentosus* and *fumatus*, *Lagria hirta*, *Mordella aculeata*, *Chilo-Cacti*, and *quadri-verrucatus*, *Anaspis bi-fasciatus*, *Rhynchites æquatus*, *R. nanus*, *Galeruca Cratægi*, *Haltica ærata*, *Pontia Cratægi*, *Lasiocampa Cratægi*, *Callimorpha cæruleocephala*, and *Calosoma Inquisitor*. The fortunate Entomologist may chance to discover nestled within the lovely blossom of the thorn, on a hot summer's day, the rare *Buprestis nitidula*, brilliant as an emerald. Vid. Curt. Brit. Entom. v. 1. pl. 31. A very destructive parasitic fungus, well known to gardeners as a kind of mildew or blight, and commonly taken for an insect, frequently attacks and distorts the younger leaves of the Hawthorn, Apple, and Peach trees, and seems to result from a peculiar state of the atmosphere. It is *Sporotrichum macrosporum*, of Link: forming a "pulverulent hoariness, interspersed with very minute tufts; filaments few, branched, straggling; sporules large, obtusely oval." Grev. Fl. Edin. The leaves are also subject to *Erineum clandestinum*; "peridia lax, clavate, whitish; often concealed by the involute, diseased margin of the leaf." Grev. Scot. Crypt. 141.2; and *Æcidium laceratum*; Grev. Scot. Crypt. 209; "peridia densely aggravated, elongated, subimmersed, pale brown, irregularly torn: sporidia brown, copious," a parasite of singularly curious structure, as displayed by Dr. Greville; investing the leaves, small branches, and fruit of Hawthorn abundantly. Near the rustic bridge in the Belan grounds, at Wynnstay, North Wales, the Editor measured a Hawthorn six feet in girth, five feet from the ground, which may be considered an extraordinary size. As an isolated individual, few of its kind will be viewed with deeper interest than the identical Thorn planted by the hand of the ill-starred, but fascinating Queen Mary, in the garden court of the Regent Murray's house, and still extant. Its present dimensions are about five feet in girt near the base, dividing upwards into two branches, one nearly four

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* (From μεσος, middle, and πιλεω, to bind together; referring to its astringent qualities, E.)

M. GERMAN'ICA. Leaves spear-shaped, downy underneath: flowers solitary, sessile, terminal.

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feet in circumference, the other three. A flattering representation of this remarkable tree appears in Jones's very elegant work, "Edinburgh Illustrated." Phillips justly remarks that "the garland of Flora does not possess a more charming blossom than this British hedge beauty; nor do the most luxuriant spices of Asia yield a more grateful perfume than this flowering shrub." Before the Christian era, according to Diodorus, the Troglodites adorned the funeral obsequies of their parents with branches of Hawthorn, as a joyful emblem of their lively faith that death was indeed the *janua vitæ*, having passed through which they should never again be separated. It was appropiated to the nuptial chaplets of Athenian maidens, and composed the *fasces nuptiarum* of the Romans: nor did our ancestors omit with it to decorate the May-pole on their Floral festival. In fact, whether the Hawthorn be permitted to live its century in wild luxuriance, attaining to the height of twenty or thirty feet, or be destined to submit to disfigurement and degradation in the more immediate service of man, it equally merits our regard. The standard tree, whether we view its flowers in the spring, its foliage in the summer, or its fruit in the autumn and winter, is one of the most ornamental plants placed singly, that can be scattered over a park or lawn.

"In pearls and rubies rich the *Hawthorns* show,
While through the ice the crimson berries glow." Philips.

Nothing can exceed its loveliness in such situations during the months of May and June: especially as displayed in the natural glades of our extensive forests, or combined with park scenery as at Woburn, Bedfordshire; Eastwell, Kent, &c., where each bush at early morn, or eventide, bathed in nectareous dews, fills the circumambient air with most refreshing odours, and, in general effect, almost rivals the Hesperian groves. Nor should the Thorn or *Quick* be slighted in its more abject condition, where

"Fringing the forests devious edge,
Half rob'd appears the *Hawthorn* hedge;
Or to the distant eye displays
Weakly green its budding sprays."

But nowhere is this too generally despised tree observed to more advantage, or at least connected with more interesting associations, than when situated on the village green; where it may, for successive generations, have distinguished the arena of rural sports, and conferred a zest on many a passing event.

"The *Hawthorn* bush, with seats beneath the shade,
For talking age and whispering lovers made."

Adjacent to which should ever be seen the aspiring May-pole, decked with garlands of the choicest flowers; and which, even though originating in pagan rites, is worthy of being perpetuated through more enlightened generations, as the focus of joyous attraction, healthful exercise, and innocent amusement; preserving a happy medium between morbid refinement and gross sensuality or further afield,

"Where every shepherd tells his tale,
Under the *Hawthorn* in the dale;"

Or as the oft-frequented "trysting tree" so emphatically described by the impassioned poet,

"If heaven a draught of heavenly pleasure spare,
One cordial in this melancholy vale,
'Tis when a youthful, loving, modest pair
In other's arms breathe out the tender tale
Beneath the milk-white *Thorn* that scents the evening gale."

A very correct naturalist has observed, that few plants deviate from their stated season of blossoming so little as the Hawthorn; being, in a long course of years, neither allured by the blandishment of the most seductive April, nor materially retarded even by "Chill Winter lingering in the lap of May."

The common Hawthorn sports in the following varieties: the large scarlet Hawthorn;

(*Fl. Ross.* 13. 1. E.)—*Ludw.* 88—*Blackw.* 154—(*E. Bot.* 1523. E.)—*Ger.* 1264. 1—*Dod.* 801. 1—*Lob. Obs.* 591. 1—*Ger. Em.* 1453. 1—*Matth.* 253—*Park.* 1422. 2—*J. B.* i. *a.* 69—*Trag.* 1014—*Lonic.* i. 13. 1.

(A tree of very unequal, often humble and deformed, growth, spreading. *Leaves* four or five inches long, on short stalks, single-ribbed, assuming a handsome stellate form of growth. E.) *Floral-leaf* strap-shaped. *Calyx* fleshy, woolly within; teeth longer than the blossom. *Stamens* unequal, thirty or more. *Summits* cloven. *Blossoms* white, large. *Fruit* reddish brown, (depressed, concave at the top, austere till mellowed by keeping. In its wild state this tree is furnished with shining thorns, though when cultivated it is entirely without them. Roth and Hal. E.)

MEDLAR TREE. (In all the hedges about Minshull, Cheshire. Mr. Du Bois. In Dill. About Ashburnham, Sussex, truly wild. Rev. J. Davies. Eng. Fl. E.) T. May.*

(M. COTONEAS'TER. Leaves elliptic-ovate, entire, downy beneath: germen smooth: styles three or four.

Hook. Fl. Lond. 207—*Fl. Dan.* 142—*Pall. Ross. t.* 14—*Crantz. Austr. t.* 2. *f.* 1—*Amman. Stirp. t.* 34—(*Curt. Entom. pl.* 129. E.)

A small bush, with alternate, spreading or partly recumbent, round, leafy, brown, smooth *branches;* downy and somewhat angular when young. *Leaves* alternate, deciduous, an inch long, more or less; green, smooth,

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from the additional splendour it acquires by its oblong, smooth, and large, bright scarlet berries, it is propagated to enliven plantations. Yellow Haw is deemed an "exquisite plant," the buds at their first coming out in the spring are of a fine yellow, and the fruit is the colour of gold, and so continues all the winter. Maple-leaved Hawthorn has few thorns, larger leaves than common, succeeded by bunches of beautiful shining red berries. Nature seems to have peculiarly designed the double-blossomed kinds for the pleasure garden; they will blossom freely either as trees or dwarf shrubs, and nothing can be more attractive than the roseate hue of the pink kind. If such be the charms resulting from the general view of this plant in its plenitude of floresence to the common observer; neither will the more strict scrutiny of its particular parts in their original simplicity yield less gratification to the scientific student; for, as is remarked in the Sylva Florifera, "the Botanist looks into the flowers of the Hawthorn, not merely to notice the stigma and to count the stamens which surround it, but he observes the shape of the five petals, whose concave forms protect the pollen, and mature it by acting as reflectors. He then sees them bend over their stamens, and rest their heads of pollen on the stigma. He is delighted with the regularity with which they discharge their prolific powder, and retire to give place to other stamens, until the whole have performed their office without confusion. He knows then that the petals have accomplished their part towards the formation of the future plant, and he sees them given to the wind without regret, because he understands it is necessary for the young fruit to enjoy the juices of the plant, without their being spent any longer on the petals." E.)

* (This species and varieties are cultivated in gardens for the fruit.

"The *Medlar*, fruit delicious in decay." Philips.

"The Nottingham kind is considered, though smaller, preferable for richness and poignancy of flavour. When firm and sound, Medlars are of a singularly austere disagreeable taste; yet having lain some time after being gathered, till they assume a state of decay and become soft, they acquire a flavour extremely agreeable to many, though to others altogether unpalatable. These fruits should be gathered towards the end of October or beginning of November, when some should be laid in moist bran, (in several layers), to forward their decay; others on straw in the fruitery; those in the bran will begin to be ready for use in about a fortnight, and those laid on straw will come gradually forward in succession." Encyc. Brit. In the North of England it rarely ripens its fruit, though it there blossoms freely. Winch. Geog. E.)

and even above; white, cottony and veiny beneath. *Foot-stalks* short, downy. *Stipulas* in pairs, tapering, chesnut-coloured, smooth; fringed at the edges. *Flower-stalks* downy, from the same buds as the leaves, and always shorter than them. *Bracteas* minute, red, lanceolate, acute. *Flowers* drooping, pale red. *Fruit* finally turning black, mealy, tasteless.

Dwarf Quince-leaved Medlar. *Cotoneaster vulgaris.* Lindl. in Linn. Tr. vol. xiii. Discovered on the limestone cliffs of the Great Ormshead, Carnarvonshire, in various places, by Mr. W. Wilson in 1825; particularly near Llandudno, growing on the shelves of the rocks which incline to the north, in the vicinity of the New Mine. Sm. Hook. E.) S. July.*

PY'RUS.† *Cal.* superior, five-cleft: *Petals* five: (*Pomum* with two to five membranous, bivalved capsules: *Seeds* two. E.)

P. commu'nis. Leaves entire, serrated, smooth: flowers forming a corymb.

Blackw. 453—(*E. Bot.* 1784. E.)—*Matth.* 237—*Lob. Obs.* 590. 2—*Ger. Em.* 1457—*Park.* 1500. 1 *and* 2—*Dod.* 800—*Ger. Em.* 1456—*Ger.* 1267 *to* 1270—*Lonic.* i. 11—*Trag.* 1045—*Gært. t.* 87.

Blossom white. (A tall tree; main *branches* upright, the smaller ones curving downwards: the younger *leaves* clothed with an evanescent woolliness. *Leaf-scales* strap-shaped. *Corymb* hairy. *Fruit* tapering towards the base, hard, acerb. Fl. Brit. E.)

Wild Pear-Tree. Iron Pear. (Welsh: *Rhwning-bren*; *Gellyg-bren*; N. W. *Per-bren.* S. W. *P. Achras.* Gært. E.) Woods and hedges. T. April—May.‡

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* (The roots of this shrub running very deep in the earth, it has been recommended by Linnæus for making low hedges, in dry broken ground. but Hooker states that it is liable to be browsed by sheep.. E.)

† (According to De Theis, derived from the Celtic *Peren*; whence the Anglo-Saxon Pere, the English *Pear*, and French *Poire*. E.)

‡ The Pear-tree loves a fertile soil and sloping ground; but will not thrive well in moist bottoms. It stands the severest winters and does not destroy the grass. The wood is light, smooth, and compact; it is used by turners, and to make joiners' tools; and for picture-frames to be stained black, it is particularly valuable. The leaves afford a yellow die, and may be used to give a green to blued cloths. The fruit is so austere (as to be relished only, like other crudities, by hedge-hogs and swine; E.) but, when cultivated, highly grateful, (as is proved by the more than hundred varieties of excellent pears which all originate from this: and distinguished as summer, autumn, and winter fruit, afford a grateful supply throughout the year. E.) The juice of the fruit fermented is called Perry, large quantities of which are raised in Worcestershire and Herefordshire for that purpose. The Squash, the Oldfield, and the Barland Perrys are reckoned the best, and are little inferior to wine. (The superior excellence of French pears is supposed to arise, not altogether from advantages of climate, but partly from a practice which ought to be adopted by British pomonists, viz. the grafting on a quince stock · which has the property of stunting the growth of pears, of forcing them to produce bearing branches instead of sterile ones, and of accelerating the maturity of the fruit. According to a report in "Annales de Chimie," tom. 68, by M. Dubuc, sugar has been prepared in France both from pears and apples, which are found to yield about one ounce of sugar from each pound weight of the fruit, and which might be afforded where pears and apples cost not more than one shilling the hundred weight, for about twopence per pound. Near the parsonage house an Holm Lacy, a seat of the Duke of Norfolk, in Herefordshire, the Rev. R. Warner observed a most remarkable Pear Tree, covering nearly

P. ma'lus. (*Leaves ovate, acute, serrated: flowers in a simple sessile umbel.* E.)

(*Fl. Dan.* 1101. E.)—*E. Bot.* 179—*Blackw.* 178—*Ger.* 1276. 1. 2. 3—*Ger.* 1272. 4—*Ger. Em.* 1461—*Park.* 1503. 2.

(A small tree with spreading knotty branches. *Leaves* when young downy underneath; *stipulas* strap-shaped: *umbels* terminal, sessile, hairy. *Fruit* roundish, an inch in diameter, umbilicated at the top and bottom, acid. *Branches* spreading, more horizontal than in the former species, tortuous. Fl. Brit. E.) *Leaves* more circular than those of the preceding species. *Petals* delicately tinged with red on the outside; *bloss.* very beautiful, and slightly fragrant.

Wild Apple* Tree. Crab Tree. Wilding. (Welsh: *Afalwydden.* Gaelic: *Abhal-fiadhaich.* E.) Woods and hedges. T. May.†

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a quarter of an acre, and forming an orchard of itself, having yielded for many years from twelve to sixteen hogsheads of Perry. This tree has spread from a succession of layers which have rooted and bear fruit. E.) Horses, cows, sheep, and goats eat the leaves, which afford nourishment to *Papilio polychloros, Phalæna Populi, lubricipeda, quercifolia, pudibunda, cærulocephala, brumata, Pomonella, Aphis Pyri, Chermes Pyri, Musca Pyrastri.* Linn. (*A. Tinea*, with a caterpillar having a yellowish body and black head, in early spring, establishes itself on the under surface of the leaves, in a downy, russet-coloured projection over a round excavation in the cuticle and parenchyma. The case in which the caterpillar resides is composed of silk, spun from its mouth, almost as soon as it is excluded from the egg. This little tent is preserved in a perpendicular position by silken threads, and is moved from one part of the leaf to another, the inner eating away the space immediately beneath it. When these little creatures abound to the great injury of Pear-trees, every leaf will be found bristled with them, and covered with little specks, the vestiges of their former repasts.—Other curious details may be found in "Entomology" by Kirby and Spence, vol. i. 461. The leaves are also, in their decaying state, subject to the parasitic fungus, *Æcidium cancellatum*, with "capsules conical, red brown; at length splitting, forming a tuft of whitish, permanent threads, cohering at their apex." This fungus first appears in small, black, rough spots, on the upper side of the leaves, on an orange-coloured ground. Sowerby. 409. 410; and similarly situated may likewise be observed, though not so commonly, *Erineum Pyrinum*, in broad oblong patches, changing from white to rust colour. E.)

* (From the Celsic *Api*, whence Teutonic *Apfel*, and English *Apple*. E.)

† The Crab-tree flourishes better on declivities and in shady places, than in open exposures or boggy lands. Grass and even corn will grow beneath it. It is much used as a stock, on which to ingraft the better kinds of apples; because its roots are neither killed by frost nor eaten by field mice. The bark affords a yellow dye. The wood is tolerably hard; it turns very clean, and when made into cogs for wheels, obtains a polish, and wears a long time. The acid juice of the fruit is called Verjuice, and is applicable to recent sprains, and other cases as an astringent or repellent. With a proper addition of sugar it is probable that a very grateful liquor might be made with the juice, little inferior to Old Hock. Horses, cows, sheep, and goats eat it; swine are very fond of the fruit. Linn. *Phalæna dispar, Populi, Fascelina, Chrysorrhœa, Psi, Oporana brumata, Pomonella, Monacha, Aphis Mali;* and *Scarabæus Horticola* feed upon it. (Of Cyder large quantities are made in Herefordshire, Devonshire, part of Worcestershire, Somersetshire, and Gloucestershire, in a soil of deep clay. The stronger sorts, as the Styre Cyder, will bear exportation to the East and West Indies. The Cyder Apple-trees were originally brought from Normandy, and it is supposed that the liquor would now be improved by a fresh importation. A simple method of forcing barren trees to bear fruit has, according to Dr. Noehden, been practised with success in Germany, and though perhaps more generally adapted to wall trees, may occasionally be applied to standards. At the budding season, make two circular incisions a quarter of an inch apart, quite through the outer and inner bark of the branches you intend to force. Remove the intervening ring of bark, leaving the wood bare. By this process the fruit will be increased both in size and quantity. Thomas Andrew Knight, Esq. F. R. S.

P. TORMINA'LIS. E.) Leaves heart-shaped, with seven angles: lowermost lobes divaricating: (flower-stalks corymbose, branched. E.)

so justly celebrated for his researches into vegetable physiology, has published, among various other papers, a volume of very ingenious experiments on Apple and Pear Trees, and subsequently a work entitled the "Pomona of Herefordshire," in which will be found descriptions of both the old and improved fruits, together with highly finished representations of each kind. Mr. Knight is of opinion that all the *varieties*, (as in this instance from the parent stock of the Common Crab), are limited in their existence; hence, he infers, so many once valuable kinds are now apparantly worn out: and that the only permanent reproduction is that of *species* by seed. The Rev. Mr. Williamson has proved experimentally, in Kent, that trees raised from the kernels of the fruit are still liable to disease and premature decay, and is inclined to believe that the want of summer heat must be deemed a principal cause of this failure. He observes that a hot summer will produce a temporary revival; orchards apparently worn out, starting into fresh vigour, and bearing large quantities of fruit: and that though in Russia and America the winters are more severe, the summers are hotter than with us, and therefore both moss and cankers are comparatively unknown on their Apple-trees. In confirmation of the above remark, and also in refutation of the fanciful theory, that the Golden Pippin, and some others of our very best apples, were degenerating, and rapidly disappearing, from mere *sympathy with the parent stock*, it should be recorded, that in consequence of the late genial summers, (1821, &c.) both in Covent Garden market, and the nurseries round London, there was as fine and as plentiful a crop of Golden Pippins as was ever known. The planters of orchards, therefore, need not despair of this favourite apple, whose cyder surpasses in richness "the gay champagne." The Golden Pippin is almost peculiar to England, and should be invariably grafted on a Crab stock to insure sound and piquant fruit; those trees raised on free stocks producing, though perhaps a larger, yet a mealy and degenerate fruit. It may be well to know that moss and insects, so seriously detrimental to neglected orchards, and equally infesting both Apple and Pear trees, may be most effectually removed by a wooden scraper, and afterwards so completely destroyed by a dressing of fresh made lime from the kiln, slacked in water and applied with a brush, that renewed vigour, and even a renewed outward bark, will sometimes supervene. Among numerous mischievous intruders, the American or White Blight, (*Aphis lanata*), which commits extensive ravages on Apple trees, from its curious habits merits the particular notice of the young Entomologist. (Vid. Journ. Nat. Pl. vi. 8.) It will be found covered and quite concealed by a peculiar secretion, which transpires through numerous pores in the skin, (forming a cradle for the viviparous creatures), so that the crevices in the bark which it inhabits look as if they were filled, not with animals, but with cotton. Nor is the fruit itself exempt from a peculiar pilferer, which fattens on its heart's core. The cross-bill, (*Loxia curvirostra*), attracted even from the pine forests of Germany, (for it rarely breeds in England), migrates to our orchards to feed upon the seeds of the Apple, and extensive is the mischief it does by cutting the fruit asunder with its well constructed mandibles, in order to obtain the kernels. The juice of apples is a menstruum for iron. A solution of iron in the juice of Golden Rennets evaporated to a thick consistence, proves an elegant chalybeate, which keeps well. Greatly as we venerate ancient usages, and regret the departure of good old times, among the vestiges of superstition, "more honoured in the breach than the observance," "The custom of saluting the Apple trees at Christmas, with a view to another year, is still preserved both in Cornwall and Devonshire. In some parishes the parishioners walk in procession, visiting the principal orchards in the parish. In each orchard one tree is selected as the representative of the rest; this is saluted by a certain form of words, which have in them an air of incantation. They then either sprinkle the tree with cyder, or dash a bowl of cyder against it, to ensure its bearing plentifully the ensuing year." Forster's Per. Cal. The delicately blended pink and white of the Crab blossom renders it still more exquisitely beautiful, either collectively or individually, than that of the Apple: but every one not wholly lost to the vivifying influence of Spring, or insensible to the most lively parterre in the garden of nature, will acknowledge that the combined beauties and refreshing fragrance of the Apple or Pear orchards on the incense-breathing morn of rosy May, when the trees have assumed their most luxuriant verdure, and the very hedges teem with sweets, are unrivalled; and be ready to exclaim,

Jacq. Austr. 443—*Fl. Dan.* 798—*Hunt. Evel.* 182. i. 176. *Ed.* 2*d.*—*E. Bot.* 298—*Matth.* 263—*Clus.* i. 10. 2—*Dod.* 803. 2—*Lob. Obs.* 614. 2—*Ger. Em.* 1471. 2—*Ger.* 1287. 2—*Trag.* 1010—*Park.* 1420. 2—*J. B.* i. *a.* 63—*Cam. Epit.* 162—*Lonic.* i. 5. 2.

(A middle sized tree with hard wood, and smooth bark. *Leaves* on long stalks, serrated, smooth. *Corymb* terminal, branched, woolly, many flowered. Fl. Brit. E.)—*Blossoms* white, numerous. *Fruit* reddish brown, austere, small.

WILD SERVICE TREE, or SORB. (Irish: *Keora Cuh'ra.* Welsh: *Cerddinen wyllt.* *P. torminalis.* Willd. Sm. *Cratægus torminalis.* Linn. Huds.

"Oh! who that has an eye to see,
A heart to feel,—a tongue to bless,
Can ever undelighted be
By Nature's magic loveliness!".

No where may the admirers of such scenery be more completely gratified, than on contemplating at such a season, the boundless and richly diversified prospect from the summit of Malvern Hill, (an elevation of one thousand feet above the vale), whence all the nearer landscape, within distinct observation, comprehending on one side the Pear-trees of Worcestershire, on the other the Apple-trees of Herefordshire, will be found to display

"One boundless blush, one white-empurpled shower
Of mingled blossoms.

Such a prospect must excite sentiments not merely of admiration, but of gratitude:

"Soft roll your incense herbs and fruits and flowers,
In mingled clouds, to HIM whose sun exalts,
Whose breath perfumes you, and whose pencil paints."

This gorgeous show is succeeded from the end of July to October, by the gradual ripening of the different kinds, for the dessert, the kitchen use, or the cyder making; most of which improve in perfection after being gathered, and several of the winter kinds, in particular, keep good for many months, even till the arrival of apples on the following summer. Mr. Salisbury asserts that no less than 50,000*l.* was paid for apples, from the northern provinces of France, to supply the London market, in the season of 1816 only.—An ingenious Frenchman has prepared an agreeable kind of bread with one third of boiled apples to two thirds of flour. Apples carefully gathered, laid awhile to mellow, then crushed in a mill, pressed till all their juice is extracted, and afterwards fermented, become cyder. The same process with pears, perry. The richest and strongest sorts are distributed for sale over the whole country; the inferior serve as common drink in the districts where they are produced, to the exclusion of malt liquor.

——— "Autumn paints
Ausonian hills with grapes, whilst English plains
Blush with pomaceous harvests, breathing sweets.
O let me now, when the kind early dew
Unlocks the unbosom'd odours, walk among
The well-rang'd files of trees, whose full-aged stores
Diffuse ambrosial steams.
Now, now's the time, ere hasty suns forbid
To work, disburthen thou the sapless wood
Of its rich progeny; the turgid fruit
Abounds with mellow liquor." Philips.

Thus are the charms of the one season succeeded by the more solid gratifications of another; delicious fruits have replaced the faded flowers. The mellow apple whose golden brilliancy is heightened by rich streaks of carmine, weighs down the branch which bears it; the luscious pears, and plums, whose juice is sweeter than honey, display their tempting beauties, and invite us to pluck them. How inexcusable at the sight of such blessings never to sanctify the pleasure these rich gifts afford, by reflecting on the bountiful kindness of Providence! E.)

With. to Ed. 7. *Sorbus torminalis.* Ger. Matth. Cam. E.) Woods and hedges. Bath Hills, near Bungay. Mr. Woodward. Pendeford, Staffordshire, in hedges. Mr. Pitt. (On the rocks at Knot's-hole, near Liverpool, in a situation quite exposed to the salt water, and where it must occasionally be washed by the spray of the sea. Dr. Bostock. On the side of the foot-path to Alcester Park. Purton. On Trefarthen demesne, Anglesey. Welsh Bot. Hare Down, near Bodmin. Rev. J. Pike Jones. E.) T. May.*

(P. DOMES'TICA. Leaves winged: leafits uniform, downy beneath, serrated towards the point: flowers panicled: fruit obovate. Sm. E.)

Jacq. Austr. 447—(*E. Bot.* 350. E.)—*Crantz.* ii. 2. 3—*Nash.* i. *at p.* 10. *f.* 1. 3—*Matth.* 261—*Clus.* i. 10. 3—*Dod.* 803. 1—*Lob. Obs.* 544. 1—*Ger. Em.* 1471. 1—*Park.* 1420. 1—*Blackw.* 174—*Fuchs.* 576—*Trag.* 1012—*J. B.* i. *a.* 59—*Lonic.* i. 50. 1—(*Gært.* 2. 87. E.)

(A middle sized tree of slow growth and hard wood. *Leaves* unequally winged. *Leafits* seven to nine pair, with an odd one, sessile, oblong, equal, serrated from the middle to the point, about an inch long. *Panicles* terminal, downy, repeatedly forked. *Flowers* half an inch over, cream-coloured. *Calyx* woolly. *Styles* always five. *Fruit* obovate, an inch long, reddish. *Seeds* two in each cell, according to Gærtner, though one only attains perfection. Sm. E.)

TRUE SERVICE-TREE, or SORB. (*P. domestica.* Sm. E.) *P. Sorbus.* Gært. *Sorbus domestica.* Linn. Huds. With. to Ed. 7. Willd. E.) Mountainous forests. Mountainous parts of Cornwall, and the Moorlands of Staffordshire. Ray. In the middle of a thick wood in the Forest of Wire, near Bewdley, one mile from Mopson's Cross, between that and Dowles Brook, (undoubtedly wild. E.) T. April—May.†

(P. AUCUPA'RIA. Leaves winged: smooth: leafits uniform, serrated: flowers corymbose: styles about three: fruit globular. E.)

Mill Ill.—*Hunt. Evel.* 218. i. *p.* 211. *Ed.* 2*d.*—*Fl. Dan.* 1034—(*E. Bot.* 337. E.)—*Blackw.* 173—*Matth.* 262—*Dod.* 834—*Ger. Em.* 1173—*Lob. Obs.* 514. 2—*J. B.* i. *a.* 62—*Ger.* 1290—*Park.* 1419. 2—*Trag.* 1009—*Crantz.* ii. 1. 4.

(A highly ornamental tree, though of rather formal contour, of slow growth, and rarely attaining great size. Bark smooth. E.) *Leafits* seven or eight pair, sessile, spear-shaped, serrated, the intermediate ones the longest. *Corymb* terminal. *Berry* round, of a pleasant red or scarlet.

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* (The fruit, when a little frosted, becomes agreeably acid and wholesome, and sometimes appears in the London market: nevertheless, (with all due respect for so high an authority as Evelyn), we cannot altogether concur in his interpretation of the specific name, "so called for its effects *against* gripings in the bowels." E.)

† The fruit is mealy and austere, not much unlike the Medlar. *Chermes Sorbi* and *Coccinella bipustulata* live upon this and *P. aucuparia.* Linn. The wood is valuable for making mathematical rulers and excisemen's ganging sticks. Nash. (If not a primary argument, the inference is legitimate, and favourable to the study of nature, that amidst the general corruption of morals attendant on wealth and luxury among the Romans, none but their prince of naturalists, (except perhaps the unamiable satyrist), possessed a mind sufficiently unsophisticated to expose the various artifices then practised. Of the prevalence of fraud and cheating, Pliny unreservedly admits innumerable instances, and among them states, (lib. xxiii. c. 7), that for the adulteration of Cinnabar, (an article of considerable importance to the limner), was employed "*Sorbis tritis*," the triturated fruit of the Service-

Seeds three, four, five, reddish. Reih. *Flowers* whitish, (numerous, of an agreeable scent. *Berries* in beautiful bunches, highly ornamental through the latter part of the summer and autumn.. *Leaves* when young slightly pubescent beneath. E.)

Mountain Ash. Quicken-tree. Roan-tree, in Scotland. *Irish: Keora Cahran.* Welsh: *Pren criafal.* Gaelic: *Craobh chaorain.* *P. aucuparia.* Gært. Sm. Hook. Grev. *Sorbus aucuparia.* Linn. Huds. With. to Ed. 7. Willd. E.) Woods and hedges in mountainous and boggy situations in Wales, Scotland, and the north of England.

("How clung the *Rowan* to the rock,
And through the foliage shewed his head,
With narrow leaves and berries red." Marmion. E.)

T. April.*

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* This tree grows either in woods or open fields, but best on the sides of hills and in fertile soil. It will not bear lopping. Plants grow well in its shade. The wood is soft, tough, and solid, (excellent for hoops, and for bows next to Yew; also considered lasting for posts. E.) It is converted into tables, spokes for wheels, shafts, chairs, &c. (The tall straight rods are well adapted and used for making hurdles. Bree, in Port. The roots are formed into handles for knives and wooden spoons. The berries dried and reduced to powder, make wholesome bread; and an ardent spirit may be distilled from them, which has a fine flavour, but it is small in quantity. The berries too, infused in water, make an acid liquor, (called *Diod Griafol*, E.), somewhet like perry, which is drank by the poorer people in Wales. (In Jura the juice is used as an acid for punch. E.) In Germany the fowlers use the berries to entice Redwings and Fieldfares into nooses of hair suspended in the woods; whence its trivial name; (to which attraction alludes the Mantuan's lay:

"Sanguineisque inculta rubent aviaria baccis."

* Twelve pounds of berries yield two quarts of spirit; the pulp, after distillation, affords excellent nourishment for cattle. The bark when collected in autumn, (according to experiments made in Germany), is better adapted to the tanning of leather than even that of Oak. This tree appears to have been highly esteemed by the Druids, and is still found more frequently than any other in the neighbourhood of Druidical circles in the Scotch Highlands. Even in these more enlightened times, natives of the North may be found, who profess to believe in the efficacy of a small branch carried about them as a charm against witchcraft and enchantment. In one part of Scotland, at Strathspey, the sheep and lambs are on May Day made to pass through a hoop of Roan wood; (and the Scotch dairy-maid will drive her cattle to the *shealings*, or summer pastures, with no other rod than that of the Roan tree. Evelyn assures us that "ale and beer brewed with these berries, being ripe, is an incomparable drink, familiar in Wales, where this tree is reputed so sacred, that there is not a church yard without one of them planted in it, (as among us the Yew), so, on a certain day in the year, every body religiously wears a cross made of the wood: and the tree is by some authors called *Fraxinus Cambro-Britannica*, reputed to be a preservative against fascinations and evil spirits; whence perhaps we call it *Witcken* the boughs being stuck about the house, or the wood used for walking-staves." These vestiges of ancient superstitions, here either altogether exploded, or reduced to unmeaning customs, remind us of the amulets we have observed still so frequently suspended round the necks of cattle, or worn, with implicit faith, by the ignorant peasantry, in the South of Europe. Allusion is made to such property, as Dr. Hunter remarks, in a very ancient song, called the Laidley Worm of Spindleston Heughs:

"Their spells were vain: The hags returned
To the queen in sorrowful mood,
Crying, that *witches have no power*,
Where there is *Rown-tree* wood."

And this leads, as some commentators imagine, to the true reading of a passage in Shakspeare's Macbeth, substituting (Act 1. sc. 3.) "A *rown-tree*, witch!" for the usual reading "*Aroint thee*, witch!"—but this we deny; the latter being a genuine adverb of expulsion or avoidance, used by the bard with a like meaning in other passages, (as Edgar in Lear, &c.) though since become obsolete. "In September and October few trees add

(P. **hy'brida.** Leaves deeply pinnatifid, or half pinnate, downy beneath: flowers corymbose: styles about three. E.)

Fl. Dan. 301—(*E. Bot.* 2331. E.)—*Linn. Fil. Fasc.* i. 6.

(A moderate sized tree, with smooth grey branches, hoary when young. *Leaves* alternate, crowded about the extremities, stalked, oblong, acute, serrated, lobed towards the base, often deeply pinnatifid; smooth above, white (or rather greyish, E.) and finely cottony beneath. *Stipulas* smooth, awl-shaped, attached to the foot-stalks, but deciduous. *Flowers* cymose, cream-coloured. *Styles* three or four; cells of the *fruit* soft and pliant like those of *P. aucuparia,* agreeing with them in number. It is regularly propagated by seed. Sm. E.)

Linnæus considered it as a mule plant, produced between *P. Aria* and *P. aucuparia,* having the flowers and pistils of the latter, with the foliage of the former, the leaves being rather winged at the base, but confluent upwards.

(It would appear that *P. hybrida* seems to vary from *P. Aria,* and to obtain the wing-cleft or pinnatifid character by growth in gardens and shrubberies; vid. Note, p. 171. Bot. Guide. E.)

(Bastard Mountain Ash. *P. hybrida.* Fl. Brit. not of Willd. *P. pinnatifida.* Ehrh. Sm. *Sorbus hybrida.* Linn. With. to Ed. 7. On mountains In rocky places on Cairn na Callich, and other mountains at the north end of the Isle of Arran. Mr. J. Mackay. Fl. Brit. E.) T. May.*

(P. **a'ria.** Leaves simple, elliptical, cut, serrated, stalked; white and downy beneath: flowers corymbose: styles about two. E.)

Fl. Dan. 302—(*E. Bot.* 1858. E.)—*Crantz.* ii. 2. 2—*Mill. Ill.*—*Hunt. Evel.* 181. i. *p.* 175. *Ed. 2d.*—*J. B.* i. *a.* 65—*Lob. Adv.* 435. 1—*Ger. Em.* 1327. 2—*Park.* 1421—*Ger.* 1146. 2.

(A small tree, conspicuous for the white mealiness or close tomentose appearance of the under surface of the *leaves,* likewise investing the *flower-stalks* and *calyx.* Parallel ribs prominent on both sides of the leaves. *Flowers* white, in large bunches. *Styles* often three or four. *Fruit* with as many cells, globular, scarlet, dotted, mealy, acid, astringent. *Seeds* two in each cell. E.)

(Var. 2. *P. aria β.* Eng. Fl. *P. intermedia.* Ehrh. Willd. *Cratægus Aria β.* Linn. *Sorbus hybrida.* Huds. With. to Ed. 7. Leaves with five to seven marginal lobes on each side, slightly pinnatifid, but not so

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more to the gaiety of picturesque scenery, when the glowing vermillion fruit decorates the boughs so superbly by its pendent *pomes*, for botanical language will scarcely allow us to say berries, because the seeds are disposed like those of the apple in a fleshy pulp, and divided into cells." Phillips. A variety with yellow-striped leaves is sometimes admitted into shrubberies. *Æcidium cornutum,* Grev. Scot. Crypt. 180: "Peridia very long, curved, pale-brown, bursting from an orange-coloured thickened spot; sporidia sub-globose;" on the inferior surface of the leaves in summer and autumn very frequent: and on both sides of the leaves may be occasionally observed *Erineum Sorbi,* Grev. Scot. Crypt. 23. "Distinct, or somewhat effused, superficial, lax, at first reddish, at length brown ferruginous; peridia cylindrical, obtuse, and somewhat incurved at the summits." The new vegetable acid, named *Sorbic Acid,* is found most abundantly to pervade the Mountain Ash. It differs materially from the Malic acid, but its peculiar properties are not yet thoroughly ascertained. New Month. Mag. 1810. The rare insect *Apion* (*Attelabus*) *Sorbi* is said to haunt this tree. E.)

* (It is not considered unworthy of introduction into modern pleasure grounds. E.)

towards the base. Smith observes, "there can scarcely be found a tree of the *Aria* on which some leaves do not answer to this variety."

Such undoubtedly is the plant of Castell dinas y Brân, near Llangollen, so long observed by Mr. Griffith, and mistaken by Hudson for the Linnæan Sorbus hybrida, whence the confusion which has till recently prevailed.

Penmaen Mawr produces a plant nearly similar, described by Mr. Griffith as "an upright stiff tree, with cuneate leaves, entire at the base, and only serrated at the apex." This is the *Afalcur Pren*, or *Lemon-tree*, well known in Carnarvonshire, and noticed by modern tourists, but why so preposterously designated is not obvious. E.)

WHITE-BEAM TREE. WHITE WILD PEAR TREE. (WHITE-LEAF TREE. *P. Aria.* Willd Sm. Hook. Grev. Winch. *Cratægus Aria.* Linn. Huds. With. to Ed. 7. *Sorbus Aria.* Crantz. E.) Woods and hedges, especially in mountainous situations and calcareous soil. Mountainous parts of Derbyshire, from the fissures of precipices, without any appearance of soil. Mr. Woodward. Wick Cliffs, and on rocks in Leigh Wood, opposite the Hot-wells, Bristol. Mr Swayne. In Eden Dean. Mr. Robson. (Grass Wood, and Dib near Coniston. Whitaker's Craven. Woods in Purbeck; Cranbourne Chase, about West Lodge, and Hanley. Pulteney. Box Hill, Surry. Mr. Winch. Turnpike road side from Painswick to Gloucester, fronting the Roman encampment. Mr. O. Roberts. King's Park. Mr. Maughan. Grev. Edin. On St. Vincent's Rocks, just below the sea-walk, indicating a spot near to which grows *Arabis stricta*. E.)
T. May.*

SPIRÆ'A.† *Cal.* five-cleft: *Petals* five: (*Pericarps* three to twelve, one-celled, two-valved: *Seeds* one to three in each cell. Hook. E.)

S. SALICIFO'LIA. Leaves egg-spear-shaped, blunt, serrated, smooth: flowers in a compound raceme.

Fl. Ross. 21—(*E. Bot.* 1468. E.)—*Gmel. Sib.* iii. 39—*Kniph.* 3—*Clus.* i. 84.

(Grows in straight rods, branches inclining to yellow. *Leaves* alternate, nearly sessile, broad-spear-shaped. Fl. Brit. E.) A shrub about four feet high. Serratures of the leaves not very regular. *Flowers* rose red, paler when expanded, (forming a dense sort of spike. E.)

(It increases rapidly by suckers, but seldom or ever perfects its seeds in this island, whence it has been inferred not to be properly a native; but, when we consider that it flourishes in the frigid clime of Siberia, and the lone spots in which it is observed in Britain, we can scarcely doubt its title to admission in our Flora. E.)

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* It loves dry hills and open exposures, and flourishes either in gravel or clay. It bears lopping, and permits grass to grow under it. The wood, being hard, tough, and smooth, is used for axle-trees, wheels, walking-sticks, carpenters' and other tools. The fruit is eatable when mellowed by autumnal frosts, and an ardent spirit may be distilled from it. It seldom bears a good crop of fruit two years together. Sheep and goats eat it. On Breidden Hill it is very difficult of access. Mr. Aikin observes that the goats devour every plant within their reach.—The wood affords an excellent charcoal for the makers of gunpowder. Mr. Gough. (The White-beam is by some considered ornamental, and is said to be "engaging at all times of the year, and catches the attention even in winter; for then we see it stand, though naked of leaves, with a fine straight stem with smooth branches, spotted with white, at the end of which are buds swelled for the next year's shoot, giving the tree a bold and fine appearance." Encyc. Brit. E.)

† (From σπεῖρα, that which admits of being twisted, from its flexibility, or woven into garlands, to which use Pliny alludes. E.)

(WILLOW-LEAVED SPIRÆA. Welsh: *Erwain helyg-ddail.* E.) Mr. Gough of Kendal, who first remarked it as indigenous, says it occurs in moist hedges in Westmoreland, in many places on the borders of Winandermere, and that it has lately been observed by Mr. Dalton, of Manchester, by the road between Pool Bridge and Colthouse, near Hawkshead, Cumberland. (Hedge between Green Hammerton and Knaresborough, far from any house or garden. Teesdale.* In a wood at Hafod, Cardiganshire, near a gate, in the eastern approach to the house. Sir J. E. Smith. Sides of fields about Pitcaithly, Perthshire, and in woods on the banks of Alt-Graad, Frith of Cromarty. Mr. Anderson. Banks of Cartlane Crags, Glasgow. Hopkirk. In a hedge in the parish of Llanwillog, between Bryngola and the church, Anglesey. Welsh Bot. In Gibside wood, Durham. Mr. R. Wigham. Eng. Fl. E.) S. July.[*]

S. FILIPEN'DULA. Leaves interruptedly winged: leafits strap-spear-shaped, irregularly serrated, smooth: flowers in tufts: (styles many. E.)

(*Hook. Fl. Lond.* 125. E.)—*Fl. Dan.* 635—*E. Bot.* 284—*Blackw.* 467—*Kniph.* 3—*Fuchs.* 562—*Trag.* 883—*Lonic.* i. 220. 2—*Ger.* 900. 1—*Matth.* 865—*Clus.* ii. 211. 2—*Dod.* 56. 1—*Lob. Obs.* 420. 3—*Ger. Em.* 1058. 1—*Park.* 435. 1—*Pet.* 71. 6—*H. Ox.* ix. 20. *row* 1, *left hand figure.*

(*Roots* consisting of numerous black, oval, farinaceous knobs or glandules, connected by slender fibres. *Stems* herbaceous, from one foot to a yard high or more. *Leafits* mostly alternate, smooth on both sides and shining. A pair of little leafits sessile on the leaf-stalk between each pair of larger leafits. *Fruit-stalk* bent before the flowers expand. *Petals* cream-coloured, purplish underneath, deflexed. *Styles* eight to twelve. *Leaves* high, slender, mostly radical. *Plant* varying greatly in size. E.)

DROPWORT. (Welsh: *Crogedyf.* E.)* Mountainous meadows and pastures, in calcareous soil. Swaffham Heath, Norfolk. Mr. Crowe. Ripton, Huntingdonshire. Mr. Woodward. Bredon Hill, above Overbury, Worcestershire. Nash. Near Madresfield, Worcestershire Mr. Ballard. St. Vincent's Rocks, Bristol. Mr Swayne. Rocky ground between Dundee and Broughty Castle. Mr. Brown. About Stone Henge. (Debris of Salisbury Craigs, Edinburgh. Dr. Greville. At Baydales and Conniscliffe, near Darlington. Mr. Robson. In fields on the coast, near Whitburn. Winch Guide. Between the church and the Llanerchymed road, in the parish of Llanbedr, Anglesey. Welsh Bot. E.) P. June—July.[†]

S. ULMA'RIA. Leaves interruptedly winged: leafits egg-shaped, doubly serrated, hoary underneath, (the terminal one largest and lobed: styles numerous: E.) flowers in tufts.

Curt. 340—(*E. Bot.* 960. E.)—*Ludw.* 23—*Fl. Dan.* 547—*Blackw.* 465—*Kniph.* 1—*Clus.* ii. 198. 1—*Dod.* 57—*Ger. Em.* 1043—*Park.* 592. 1—*Pet.* 71. 8—*H. Ox.* ix. 20, *row* 1, 1. *fig.* 3*d.*—*Ger.* 886—*J. B.* iii. 488. 2.

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[*] (Long cultivated in gardens and shrubberies by the name of *Spiræa frutex*, and generally propagated from suckers. The young shoots being tough and pliable, are often used for the tops of fishing rods. E.)

[†] The tuberous pea-like roots, (whence the trivial name, E.) dried and reduced to powder, make a kind of bread, which in times of scarcity, is not to be despised. Hogs are very fond of them. Linn. When expanded and enlarged by cultivation, sometimes with double flowers, this plant is a beautiful addition to the flower garden.

(*Styles* six or eight. *Root* fibrous. *Stem* three or four feet high, furrowed, leafy. *Flowers* white, small, very fragrant. Fl. Brit. E.) *Stem* angular, reddish. *Leaves* bright green above, white underneath, irregularly serrated; the terminal leafit divided into three segments. *Flowers* yellowish white, numerous. *Calyx* segments and petals sometimes four. *Capsules* five to eight, but mostly six, twisted spirally together.

MEADOW-SWEET. QUEEN OF THE MEADOWS. (Irish: *Airgia Lovaghra.* Welsh: *Erivain; Chwys Arthur.* Gaelic: *Lus-chneas-Chuchullainn.* E.) Moist meadows, and banks of rivers. P. June—Aug.*

POLYGYNIA.

RO'SA.† *Petals* five: *Cal.* urn-shaped, five-cleft, fleshy, contracted at the neck so as to form at length a coloured berry of one cell, opening at the top: *Seeds* many, hispid, dispersed in the pulp.

(The Editor has admitted a large accession to the species of this beautiful and interesting genus of plants; not, indeed, so much upon his own entire conviction of their permanency, as in conformity with the opinions of several eminent Botanists, whose opportunities for observation, and attention to the subject, merit every consideration. So far as the identity of the respective plants could be ascertained, the reformed specific characters of Smith have been adopted, while the descriptive details have been carefully compared with those of the most accurate recent authorities. The tribe of Roses is become intricate, and in no small degree perplexing, from the difficulty of pointing out characteristics at once discriminative and invariable. The leaves, (from which a true specific difference ought to be deduced,) in many instances too nearly resemble each other; whilst the hips, or fruit, which have by some been deemed of primary consequence, unfortunately preserve no absolute character either as to form, colour, smoothness, or roughness; and even were that not the case, could indicate their respective species only during a short period of the year. Sir J. E. Smith and Mr. Woods attach considerable importance to the presence or absence of *setæ*, (glandular bristles,) on the stems or branches of Roses; and, in a secondary degree, to the form of the *aculei*, (prickles,) whether straight and slender, suddenly originating from a broad depressed base; or hooked, dilated gradually downward, and more or less compressed. Much stress has likewise been laid on the circumstance of pubescence, its absence, presence, and quantity; yet a careful observer may perceive, in this respect, every gradation. Linnæus himself even doubted whether any certain limits between the species and varieties of this genus had been prescribed by nature. However valuable may be the observations of Smith, Lindley, Woods, Hooker, Winch, and Swartz, cultivation alone seems likely to determine these obscure points, and to remove this opprobrium from the science. E.)

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* (The leaves and tops of this plant are used in medicine as an astringent, and will tan leather. In the few countries where primitive manners are yet to be observed, the custom of scattering fragrant herbs on floors remains; and for such purpose *Meadow-sweet* has ever been highly extolled, as thus by Gerard: "The leaves and flowers far excel all other strowing herbes, for to decke up houses, to strowe in chambers, hals, and banketting houses in the sommer time; for the smell thereof maketh the hart merrie, delighteth the senses; neither doth it cause headach, or loathsomnesse to meate, as some other sweete smelling herbes do." In language less uncouth has it also been celebrated:

"Mid scents as varied as the scene,
Distinct is thine, fair *Meadow's Queen*,
With buds of pearly dye;
Graceful thy foliage and thy hue,
In softest shades of green and blue,
Attracting still a closer view,
They fix the admiring eye." S. H.

Some compare the scent to that of Hawthorn, but to our senses it is more sickly;

—— "While in the moistened plain
The *Meadow-sweet* its luscious fragrance yields."

Varieties with double blossoms and striped leaves are produced in gardens. E.) The flowers infused in boiling water give it a fine flavour, which rises in distillation. Sheep and swine eat it. Goats are extremely fond of it. Cows and horses refuse it. *Sphinx ocellata* and *Filipendula* feed on both species. Linn.

† (Derived from the Celtic *rôs*, or *rhos*, the primary root of which may be *rhood*, or *rhudd*, red. E.)

(1) *Fruit globular.*

R. ARVEN'SIS. (Fruit globose or elliptical, smooth: flower-stalks glandular: calyx pinnate, deciduous: prickles hooked, scattered: leafits simply serrated: floral receptacle slightly convex: styles combined, smooth. Sm. E.)

(*Hook. Fl. Lond.* 123. E.)—*E. Bot.* 188—*Walc.*—*J. B.* ii. 44. 1.

(*Fruit* scarlet, round or oblong. *Flowers* more cup-shaped than any other British Rose, white with a yellow base, sometimes pink. The *styles*, united in a long smooth column, distinguish this from all British species except *R. systyla*, from which it differs in having long trailing shoots, not stout assurgent ones, which are of a dull glaucous green, generally tinged with purple, and not of the bright green colour of *R. systyla*. Hook. E.) Nearly allied to, if not the same as, the garden Ayrshire Rose.

WHITE TRAILING DOG ROSE. (Welsh: *Ciros gwyn.* E.) Hedges and heaths. This is the most common Rose in the west of Yorkshire, and about Manchester. Have not seen it within fifty miles of Darlington. Mr. Robson. (King's Park. Mr. Neill. Grev. Edin. In Anglesey. Welsh Bot. Prevalent in Devonshire. E.) S. July.

Var. 2. Huds. *Wild Dog Rose,* with only one flower. Ray Syn. Indic. Between Hackney and London, and Bishop's Wood, ib. (In woods and hedges at Friar's Goose, near Gateshead; and between Sadberg and Norton, Durham. Mr. W. Backhouse, jun. In woods at St. Anthony's, and Elswick, near Newcastle, Northumberland. Mr. Winch. E.)

R. SPINOSIS'SIMA. (Flower-stalks without bracteas, mostly smooth, as well as the simple calyx: fruit globose, abrupt, somewhat depressed: prickles of the stem straight, unequal, numerous, intermixed with glandular bristles: leafits roundish, smooth, with simple serratures. Sm. E.)

E. Bot. 187—*Fl. Dan.* 398—*Ger.* 1088—*J. B.* ii. 41. 1—*Park.* 1018, 8—*Clus.* i. 116. 1—*Dod.* 187—*Ger. Em.* 1270. 3—*J. B.* ii. 40. 2.

(A dwarf, compact, dark, (sometimes reddish,) green bush, with creeping *roots.* *Branches* short, stiff, much divided, beset by very dense, unequal *prickles* or *setæ*, some of the former being usually falcate. *Leaves* close together, quite free from pubescence. *Stipulæ* either [illegible] dilated, of nearly equal breadth. *Petiols* setigerous and prickly. *Leaflets* about seven, bright green, flat, simply serrated, orbicular, or [illegible] *Flowers* solitary, without bracteas, cyathiform, blush-coloured, (white, or cream-coloured, E.) *Peduncles* naked, or rough with glands or setæ, as are the *calycine segments*, which are short and entire. *Tube* ovate, or nearly round, naked. *Petals* emarginate, concave. *Disk* not thickened. *Styles* villous, distinct. *Fruit* ovate, or nearly round, black or dark purple, crowned by the connivent or somewhat spreading segments of the calyx. Lindl. *Fruit* sometimes slightly spinous. The *plant* occasionally very diminutive, and rarely exceeding two feet in height. E.

Burnet Rose. Pimpernel Rose. (Welsh: *Murcog.* *R. spinosissima*, Linn. Sp. Pl. *R. pimpinellifolia.* Linn. Syst. Nat. E.) Heaths and sandy places. Hedges near Yarmouth, frequent. Mr. Woodward. Perran Downs, Cornwall. Mr. Watt. Hedges and ditch banks about Worcester. Dr. Stokes. Frequent in the sandy country about Bewdley. (North shore, Liverpool. Dr. Bostock. Plentifully on the Eastern Cliffs of Portland. Pulteney. By Duddingston Loch, near Edinburgh. Lightf. Frequent on hilly ground in the neighbourhood of Warwick. Perry. In woods about Derwent-water. Mr. Winch In hedges near Teignmouth E.)
P. June—July.*

Var. 2. (*R. Ciphiana.* E.) Blossoms red, striped with white. Sibb. Scot. t. 2. Lightf. (Fruit red. Winch. E.)

Ciphian Rose. Links at Cockenzie, near Edinburgh. Maughan. (In several hedges in the parishes of Llangaffo, and Llanddeinier, Anglesea. Welsh Bot. E.)

Var. 3. Fruit-stalks prickly; flowers cream-colour, changing to white. (The stems appear to be still more strongly armed with spines than the common kind. E.)

Specimen from Lanscale Haws, Lancashire; sent by Mr. Atkinson, who informs me that it covers several acres of sand, to the exclusion of every other vegetable. (The Editor has recently received the same from the hills near the sea at Aberystwith. E.)

(R. **RUBEL'LA.** Fruit globose, somewhat bristly. flower-stalks bristly stem spreading, clothed with straight slender spines. leaflets elliptical, smooth: segments of the calyx entire
E. Bot. 2521.

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* The ripe fruit is eaten by children, and has a grateful sub-acid taste. The juice, diluted with water, dyes silk and muslin of a peach colour; with the addition of alum a deep violet; but it has little effect on woollen or linen. Its dwarfish growth, and the singular elegance of its little leaves, which resemble those of the upland Burnet, entitle it to a place in the flower garden. Indeed it would appear to be a favourite with the French florists, for M. Desportes informs us they have no less than 123 distinct varieties.

(The charms of the Ciphian var. having elicited an Ode Laudatory from Sir R. Sibbald; we extract a descriptive portion :—

"Multiplex qualis *Rosa* splendidisque
Lineis albis decorat Ruborem
Caryophyllis, nitet in Tulipis
Purpuraqualis.

Ne terat saltu petulante Vaga
Ales, audax arripiat mapusve,
Spiculis densis *Rosa* tuta Sævum
Vulnerat hostem.", &c. E.)

Differs from the common *R. spinosissima* in being a small spreading bush, whereas the flowering stems of that species are strong and erect, more in the manner of *R. canina*. E. Bot.

Fruit invariably pear-shaped and *scarlet;* the shrub appears a link between *R. spinosisissima* and *R. alpina,* the latter of which it resembles in habit. Winch.

Red-fruited Dwarf Rose. Banks of the Dee about Abergaldy. Mr. Anderson. Linn. Tr vol. xi. p. 244. Gathered by Mr. Winch on the sea-beach near Shields Law in the county of Durham; and supposed by him to be the same as Mr. Atkinson's plant from Lanscale Haws, with which, in foliage, it precisely accords, but in the specimens communicated to us, is much less spinous, both the fruit-stalks and stems of our plant being in a most remarkable manner thickly beset with strong prickles, in length exceeding the diameter of the parts to which they are attached E.)

(R. involuta. Fruit globose, as also the flower-stalks, very prickly: stems armed with numerous straight prickles: petals closed inwards. Fl. Brit.

E. Bot. 2068.

Resembles *R. spinosissima* in its manner of growth, and in the shade rises to a tall shrub. Winch. *Petals* whitish, tinged with red, not expanded. Fl. Brit. In specimens communicated by favour of Mr. Winch, who observes, "the *petals* are only sometimes involute, generally expanding like those of other Roses," the *leaflets* are four times the size of those of either *R. spinosissima* or *rubella,* and the *spines* less densely set than in those species. *R. Sabini* appears scarcely to differ from this, except in being taller, which may probably be accounted for by difference of situation; and under the same species may rank *R. Doniana*, (Woods, in Linn. Tr. vol. xii.) less extensively creeping at the root, and less prickly in the upper part.

Prickly Unexpanded Rose. *R. spinosissima,* var. With. Ed. 5. Discovered in the Western Islands of Scotland by Messrs. Walker and J. Mackay; also found by Mr. Winch in Heaton Dean, below Benton Bridge, Northumberland. S. July. E.)

R. villosa. (Fruit globose, half as long as the segments of the calyx, bristly as well as the flower-stalks: prickles of the stem straight: leaflets elliptic, ovate, downy on both sides: calyx permanent.

When *R. villosa* grows on sterile soil, or in a bleak situation, it assumes the stunted habit and full red flower as represented in E. Bot. 2459. This I consider as nothing but a variety of *R. villosa;* (not of Swartz, which is supposed to be an exotic, the Apple Rose of our gardens,) and its *fruit* varies from perfect smoothness to a considerable degree of roughness, and the bush altering in mode of growth according to soil and exposure. Winch.

Soft-leaved Round-fruited Rose. *R. villosa.* Woods, in Linn. Tr. v. xii. Sm. Eng. Fl. *R. villosa.* var. 2. With. Ed. 6. *R. villosa, β mollissima.* Willd. *R. villosa, β.* Fl. Brit. *R. mollis.* E. Bot. *R. tomentosa. β.* Hook. Lindl. Extremely common about Newcastle. Mr Winch. Between Edinburgh and Ravelston Wood. Sir J. E. Smith. Between Millbrook and Crafthole, Devon. Rev. J. Pike Jones. Not uncommon in the mountainous districts of England, Scotland, and Wales. E.)

(Nearly resembling the above is *R. subglobosa*, Sm. Eng. Fl. *R tomentosa*, var. ε and η. Woods. The whole plant, except the prickles "conical, hooked, compressed," and the calyx "copiously pinnate," bears more resemblance to *R. villosa* than *tomentosa*, and is particularly remarkable for its "large, globular, half-ripe fruit." Sm. E)

(R. **GRA'CILIS.** Flower-stalks bristly, generally bracteated: branches globular: fruit and calyx bristly: larger prickles hooked: leafits doubly serrated, hairy on both sides.

E. Bot. 583.

Flowers generally solitary, but occasionally two or three together: *fruit* scarlet.

Var. 2. *Fl. alb.* with the segments of the calyx usually divided. It is by far the most elegant of the British Roses, and, were it not for its hooked prickles, comes very near to *R. involuta*, var. β. Sabini.

TALL BRISTLY ROSE. *R. gracilis.* Woods, in Linn. Tr. v. xii. Sm. Eng. Fl. *R. villosa.* E. Bot. At Baydales, near Darlington. Mr. J. Backhouse. In hedges three miles and a half from Keswick, on the Lorton or Cockermouth road, ascending Finlatter, where Mr. Woods observed it; and at Pooley Bridge. Var. 2, in Ennerdale, or between that and Lampleugh Cross. Winch. Geog. Distr. E.)

(Mr. Edwin Lees announces, in Mag. Nat. Hist. i. 394, a more southerly station than has hitherto been assigned to this species, viz. in thickets near Cruckbarrow Hill, Worcester, 1828. E.)

(R. **TOMENTO'SA.** Fruit broadly elliptical, bristly: calyx copiously pinnate: prickles slightly curved: leafits ovate, acute, more or less downy. Sm.

Hook. Fl. Lond. 124—*E. Bot.* 990.

A smaller plant in all its parts than *R. villosa*, resembling in general habit *R. canina*, but that the *leaves* are pubescent on both sides, with a greyish cast. *Fruit* scarlet. *Petals* whitish at the base, above of a beautiful rose-colour. Fl. Brit. *Fruit* very different from that of *R. villosa*. Winch. Smith adds, "I have seen this plant, on removal to a rich garden soil, assume so rank and prickly a habit as scarcely to be recognized, and even in wild situations the pubescence varies greatly; still I find no considerable alteration in the division of the *calyx*, nor in the elliptical shape of its tube." Woods enumerates no less than fifteen varieties.

DOWNY-LEAVED DOG ROSE. (Welsh: *Rhosyn lledwlanog.* *R. tomentosa.* Woods. Lindl. Sm. With. Ed. 6. Winch. Purt. *R. villosa.* Var. 2. Huds. *R. villosa.* Var. With. Ed. 5. *Wild Briar*, or *Dog Rose*, with large prickly heps. Ray. Hedges, common. Ray. Woodward. Near London. Hudson. Shropshire, Wales, Norfolk. Withering. Bootle, near Liverpool. Mr. Shepherd. By no means rare in the north. By Sheriff Hill waggon-way, near Gateshead; at Hamsterley, near Mcdomsley, and in the lane between High and Low Team, Durham; also about Darlington and Keswick. Mr. Winch. Near Brent, Devon. Rev. J. Pike Jones. Near Dyffryn, in the parish of Penmynydd, Anglesey. Welsh Bot. S. June—July. E.)

(Var. 2. Fruit globose, bristly.

E. Bot. 1896.

Much resembling *R. tomentosa*, but having *prickles* more straight and slender, *leaves* harsher, and *petals* white, only blotched with red. E. Bot. A very distinct species from *R. tomentosa*, and readily distinguishable by its fruit, from either that or *R. villosa*. The buds are peculiarly handsome when sufficiently expanded to show the bright red tints, with which the outer edge of the white petals are marked. Winch. Notwithstanding the above respectable testimony, and specimens kindly communicated by Mr. Winch, which certainly in the individuals demonstrate an obvious difference at least, as regarding the fruit, that of *R. scabriuscula* appearing far more globose and bristly than that of *R. tomentosa*, (vera,) there is reason to question the permanency, both of those characteristics, and also of the one derived from the more or less pubescence or harshness of the leaves. That very accurate observer, Mr. Winch, himself admits such a probability; and, in confirmation of the more recent arrangement of Smith and others, Purton remarks, "I have a specimen of *R. scabriuscula* which accords perfectly with the figure and description in E. Bot. On the same bush I have frequently found the *unripe* fruit smooth, without the calyx; others *ripe*, with the flower-stalk and fruit bristly; and the latter still crowned by the calyx. The leaves of the branches supporting the smooth fruit were smooth underneath, whilst those bearing bristly fruit were more or less pubescent."

Roughish-leaved Dog Rose. Welsh: *Rhosyn lledarw.* *R. scabriuscula.* E. Bot. Woods. Tr. Linn. Soc. v. xii. Winch. Geog. Distr.—With. Ed. 6. *R tomentosa β*, Eng. Fl. *a*, Hook. Grev. Purt. In Ennerdale, and by the river Greta, near Keswick. Mr. Winch. In Anglesey, but not common Welsh. Bot. E.)

(R. **Hiber'nica**. Fruit nearly globose, smooth: flower-stalks smooth: prickles of the stem slightly hooked: leafits elliptical, smooth, with hairy ribs.

E. Bot. 2196.

Fruit slightly elongated upwards, but always round and broad at the base. *Stem* six feet high, upright, much branched, and very prickly. *Prickles* scattered. *Flower-stalks* often solitary, often two or three together. *Petals* pale blush-coloured. *Styles* distinct at the base. It is remarkable for continuing in blossom from the early part of June to the middle of November. The *scarlet fruit* distinguishes this species from every variety of *R. spinosissima*. E. Bot.

Irish Rose. Discovered in the county of Down, growing abundantly about Belfast harbour, by John Templeton, Esq. who consequently became entitled to the reward of £50, offered by the patrons of Botany at Dublin, for the discovery of a new Irish plant. P. June—Nov. E.)

(2) *Fruit ovate.*

R. **rubigino'sa**. (Fruit obovate, bristly towards the base: calyx pinnate: prickles hooked, compressed, with smaller, straighter ones interspersed: leafits elliptical, doubly serrated, hairy, clothed beneath with rusty-coloured glands. Sm. E.)

(*Hook. Fl. Lond.* 116—*E. Bot.* 991. E.)—*Fl. Dan.* 870—*Jacq. Austr.* 50—*Walc.*—*Ger. Em.* 1269. 1, *left hand fig.*—*Park. Par.* 419. 8.

Branches smooth, but with scattered rather large prickles. *Leafits* generally seven, egg-shaped, pointed, scattered underneath with rubiginous resinous globules. *Leaf-stalks* rough with hairs, and minute prickles, and, as are the *floral-leaves*, beset with minute glands on pedicles. *Fruit* nearly globular, beset, especially at the base, with a few small prickles. *Fruit-stalks* with very minute prickles. *Blossoms* red. *R. eglanteria* differs in growing taller, having straight prickles, and *blossoms* large, yellow, and scentless. Linn. (This latter remark is proved by the great expounder of the learned Swede, to refer to the Yellow Briar, of which the Austrian Rose, *R. bicolor* of Jacquin, is a transient variety.) Much branched, four or five feet high. *Fruit* orange red. E.)

Sweet Briar. Eglantine. (Irish: *Feirdriss.* Welsh: *Rhoslwyn pêr.* E.) (*R. rubiginosa.* Linn. Mant. Sm. Hook. Willd. Purt. Jacq. Hull. Lindl. *a.* *R. suavifolia.* Lightf. Oed. *R. odoratissima.* Scop. *R. eglanteria.* Linn. Sp. Pl. by error in Ed. 1; and see Afzelius, in Annals of Botany, vol. ii. Huds. Du Roi. Woods. Winch. E.) Hedges and heaths. Hedges, Norfolk, but not frequent. Mr. Woodward. Between Dudley and Tipton. In Mr. Terne's garden, Worcester, from a gravel pit, near Claines church. Dr. Stokes. (At Battersea. Mr. Sowerby, in E. Bot. Box Hill, Surry. Mr. Winch. On the banks of the Dee, undoubtedly wild. Mr. Anderson. Near Kimbolton; and Galley-wood Common, Essex. Mr. W. Christy. In Eastwear Bay, Kent. Mr. G. E. Smith. About Chudleigh. Rev. J. P. Jones. Alne Hills, above the village, near Alcester. Purton. Near Llysdulas, Anglesey. Welsh Bot. Sea side between Caroline Park and Cramond. Dr. Greville. Not originally indigenous to the north, and only met with on ballast hills, or occasionally in hedges. Mr. Winch. E.) S. June—July.*

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* (The refreshing fragrance, especially after vernal showers, both of the leaves and flowers of this species, causes it to be much esteemed. Double flowering and evergreen varieties have been introduced in our gardens. The Parisian floriculturists have produced no fewer than fifty-seven sorts. It bears clipping well, and knits together so as to form an agreeable secondary hedge. But Sir Walter, with perhaps better taste, deprecates this practice:—

> "Cherish the tulip, prune the vine,
> But freely let the woodbine twine,
> And leave *untrimmed* the *Eglantine*." Marm. Cant. 3.

In its more luxuriant native grace, it has for ages attracted the favourable notice of poets:—

> ——— "The wild harp, which silent hangs
> By silver Avon's holy shore,"

was frequently attuned to its praise. The bower,

> "Oer-canopied with luscious woodbine,
> With sweet musk-roses, and with *Eglantine*:"

or, more affectingly,

> * * * "Fidele,
> I'll sweeten thy sad grave; thou shalt not lack
>
> * * * * no, nor
> The leaf of *Eglantine*, whom not to slander,
> Out-sweeten'd not thy breath."

And thus Shenstone:—

> "Come, gentle air! and while the thickets bloom,
> * * * * * *
> Convey the woodbine's rich perfume,
> Nor spare the sweet-leav'd *Eglantine*."

But no child of feeling or of song has more delicately assimilated its charms than Burns:-

(Var. 2. *Small-flowered Sweet Briar*. *R. micrantha.* Woods. Sm. *R. rubiginosa* β. Lindl. Hook. Purt.

Hook. Fl. Lond. 116. *f.* 10. E.)—*E. Bot.* 2490.

Fruit ovate, somewhat bristly, as are the *flower-stalks*. *Stem* straggling, with scattered, hooked prickles. *Leafits* ovate, acute, clothed beneath with rusty-coloured glands.

Inferior to the true *Sweet Briar* in scent and compactness, as in the beauty of its blossoms, they being less than those of any other British rose. Common in hedges and thickets: more so than the better sort. E. Bot. E.)

R. CANI'NA. (Fruit ovate, smooth or somewhat bristly, like the aggregate flower-stalks: calyx pinnate, deciduous: prickles strongly hooked: leafits simply serrated, pointed, quite smooth. Sm. E.)

Curt. 299—(*E. Bot.* 992. E.)—*Kniph.* 7—*Fl. Dan.* 555—*Blackw.* 8—*Ludw.* 70—*Walc.* 5—*Park.* 1017. 1—*J. B.* ii. 43. 2—*Trag.* 986. 2—*Ger.* 1087. 2.

(Six to twelve feet high, with long trailing or over-arching branches. E.) *Leafits* two or three pair, with an odd one, pointed; serratures terminated by minute purple glands. *Leaf-stalks* sheathing; edges beset with purple glands. *Prickles* broad, flat, bowed downwards. *Calyx* segments two, furnished with long teeth on both edges, two without, and the fifth with teeth on one edge. *Petals* red, sometimes nearly white; one lobe larger than the other. (*Flowers* pale pink, clustered; soon out-topped by the leading shoots of the shrub. *Fruit* scarlet, oval. *Calyx* deciduous. *Leaves* dark shining green. The young shoots very strong, armed with large hooked prickles. Winch. The Rev. Mr. Sutton observes, in E. Bot. that as the fruit of *R. rubiginosa* is occasionally smooth, so that of *R. canina* is very rarely a little hispid. Professor Hooker states as a remarkable peculiarity in *R. canina*, that the further to the north any var. of it is found, the more villous are the styles; and the less so as it proceeds southward; these organs being quite destitute of hair in Madeira. E.)

(*R. Forsteri.* Sm. *R. collina* β, and γ. Woods, differs chiefly from this species in having the mid-rib hairy; a trivial, and probably variable distinction. *R. bracteescens*, Woods, has also been referred to *R. canina*. E.)

DOG ROSE. HEP TREE. WILD BRIAR. (CANKER ROSE, in Devonshire.

"O bonie was yon rosy brier,
That blooms sae far frae haunt o'man,
And bonie she, and ah, how dear!
It shaded frae the e'enin sun.

Yon rose buds in the morning dew
How pure, amang the leaves sae green,
But purer was the lover's vow
They witness'd in their shade yestreen.

All in its rude and prickly bower,
That crimson rose, how sweet and fair!
But love is far a sweeter flower
Amid life's thorny path o'care."

The bedeguar frequently observed on this species is called *Sweet-Briar Spunge*; and, as in other instances, the original depredator having been destroyed by the remorseless *Ichneumon*, it becomes the cradle of that fly. E.)

Welsh: *Ciros; Egroeswydd.* Gaelic: *An fhearr-dhris.* E.) Hedges and woods; frequent in most parts of Britain. S. June.*

(R. SYSTYLA. Fruit ovate-oblong, smooth: flower-stalks glandular: calyx pinnate, deciduous: prickles hooked: leaflets simply serrated: floral receptacle conical: styles combined, smooth. Sm. *E. Bot.* 1895.

This plant has the general habit and appearance of *R. canina,* but with *flowers* more numerous in each cluster; and (what perhaps affords a more essential distinction) *styles* united into a long smooth column.

LONG-STYLED ROSE. *R. systyla.* Woods. Tr. Linn. Soc. vol. xii. Lindl. Sm. Hook. *R. collinà.* E. Bot. In hedges and thickets. Common in Sussex. Mr. Borrer. At Walthamstow, Quendon, and Clapton, near

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* A perfumed water may be distilled from the blossoms: (said to be infinitely more fragrant than common rose-water, and thus eulogized by Haller, "Fragrantia ejus olei omnia alia odoramenta superat, ut inter regia dona sit."

"As swete as is the *Bramble* floure
That bereth the red hepe." Chaucer.

An esteemed drink made from the leaves and twigs is used in Tartary and Siberia, where likewise the plant is known by a name signifying *Dog-fruit.* The flowers yield a spirit, and are preserved with honey and sugar by the inhabitants of the Volga. E.) The pulp of the berries, beat up with sugar, makes the conserve of heps of the London Dispensatory. Mixed with wine it is an acceptable treat in the north of Europe. (In preparing the pulp from the heps much care should be taken to separate the rough prickly matter inclosing the seed, a neglect of which precaution has sometimes occasioned vomiting and other alarming symptoms. As the conserve is merely used to give form to other articles, the Edinburgh College have omitted it.) Though fieldfares and thrushes, when and where available, prefer feeding on insects and worms, (vid. Zoolog. Mag. vol. i.) yet they do, as every sportsman knows, freely devour the fruit both of the White Thorn and the Wild Rose. The value of the fruit of the Wild Briar as winter food for the songsters of the grove is thus prettily described by the poet:—

"The woods are stripped with the wintry winds,
And faded the flowers that bloomed on the lea;
But one lingering gem the wanderer finds,
'Tis the ruby fruit of the *Wild-briar* tree.

The strong have bowed down, the beauteous are dead;
The blast through the forest sighs mournfully;
And bared is full many a lofty head;
But there's fruit on the lowly *Wild-briar* tree.

It has cheered yon bird that, with gentle swell,
Sings, "What are the gaudy flowers to me?
For here will I build my nest, and dwell
By the simple, faithful, *Wild-briar* tree." E.

The leaves of every species of Rose, but especially of this, are recommended in the Eph. Nat. Curios. as a substitute for tea, giving out a fine colour, a sub-astringent taste, and a grateful smell, when dried and infused in boiling water. (On the strong shoots of this species garden Roses are now grafted, and thus are trained tall stems throwing out heads of considerable size, which, when clustered with varied blossoms, are highly ornamental, especially on grass lawns. By the Greeks Wild Roses were called κυνοροδον, because the root was thought to cure the bite of a mad dog; and hence the Latin *canina*, our *Dog Rose;* whose arching branches and lively odorous flowers, where

——— "Blushing, the uncultur'd *Rose*
Hangs high her beauteous blossoms,"

(intermediate in floral succession between the Hawthorn of Spring and the Honeysuckle of Autumn,) decorate our hedge rows through the prime of Summer. E.)

London. Mr. E. Forster. At Donnington Castle, Berkshire. Mr. Bicheno. Near Penshurst, Kent. Mr. Woods. Hills, Ridrig, and hills north of Milngaire, Scotland. Mr. Hopkirk. P. June. E.)

(R. DUMETO'RUM. Fruit elliptical, smooth, as tall as the bracteas: flower-stalks aggregate, slightly hairy: calyx copiously pinnate, somewhat cut: prickles numerously scattered, hooked: leafits simply serrated, hairy on both sides.

Four to six feet high, with many weak spreading branches. *Petals* reddish. *Styles* prominent, a little hairy. *Fruit* red, ovate Sm. *Calyx* long, permanent on the fruit: no doubt can exist of its being distinct from every other British species. Like *R. canina,* it frequently throws out strong leading shoots, which soon overtop the bunches of flowers. Winch.*

THICKET ROSE. *R. dumetorum.* Woods. Sm. Winch. So nearly resembling *R. Borreri,* of Woods, which is *R. dumetorum,* E. Bot. 2579, that Hooker and others unite them under *R. rubiginosa*; the var. *inodora* of which (Lindl. p. 88.) is represented in Fl. Lond. 117. In hedges in the southern counties. In Heaton Wood, near Newcastle on Tyne; and hedges near Sandyford, Northumberland. Mr. Winch. J. June. E.)

(R. GLAUCOPHYL'LA. Calyx permanent: fruit egg-shaped, smooth: leafits egg-shaped, doubly serrated, glaucous: prickles hooked.

This is a much slenderer, though less trailing briar than *R. canina*; its *flowers* are pale pink, growing in pairs or single, and its *fruit* large. It also further differs in habit, by not having young shoots sprouting beyond the blossoms, so as to give them the appearance of being axillary: and from *R. sentriosa* of Acharius, (Stockh. Tr.) in the fruit being ovate; not globular. It also resembles *R. cæsia,* E. Bot. 2367, in many points, but differs in having smooth, not downy leaves; glaucous especially in spring. It may probably have been often overlooked as a variety of *R. canina.* Winch.

DOUBLY-SERRATED DOG ROSE. *R. glaucophylla.* Winch. Geog. Distr. Ed. 1. With. Ed. 6. *R. sarmentacea.* Woods. Tr. Linn. Soc. v. xii. Swartz. M.S. Winch. Geog. Distr. Ed. 2 With. Ed. 6. In every hedge near Newcastle, Northumberland. About Keswick, frequent. Mr. Winch. E.)

(R. CÆ'SIA. Fruit roundish-ovate, smooth: prickles of the stem hooked: leafits egg-shaped, pointed, doubly serrated, downy: very glaucous, as well as the germen and young branches.

E. Bot. 2367.

Flowers most frequently solitary, sometimes in pairs. *Fruit* varies from oblong to nearly globose. It differs from *R. canina* in its downy *leaves,* and their very glaucous hue. E. Bot. Hooker has included it under that species; as also *R. dumetorum* of Woods, (not of E. Bot.)

GLAUCOUS-LEAVED ROSE. *R. cæsia.* Sm. Woods. *R. canina pubescens.* Afzel. Ann. Bot. vol. ii. Found by Mr. W. Borrer, in the Highland valleys of Perthshire and Argyleshire. By the side of Loch Tay. Mr. G. Anderson. S. July. E.)†

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* (Vide a very discriminating essay on this genus, by Nat. John Winch, Esq. in the Monthly Mag. May, 1816. E.)

† (Though in general the Botanist may be expected to devote his chief attention to the unsophisticated productions of nature, it were unreasonably fastidious not to concede a single note of admiration to the triumph of floriculture. The most splendid and compre-

(*R. cinnamomea*, E. Bot. 2388, supposed to have been once discovered near Aketon pasture, Pontefract, is no longer found there, or elsewhere in

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hensive work on Roses in general, is probably that of M. Redoutè, published at Paris in three volumes folio, and containing eight hundred kinds. About half that number are cultivated in our English nursery grounds: those of France, according to M. Desportes, boast no less than 2,533 named varieties. By proper management, a regular succession of flowering Roses, exhibiting an endless diversity of colours; red, yellow, white, and even what is termed, though not very correctly, blue, may be continued from May till October, or, in favourable seasons, till near Christmas. Then indeed, with regret, do we behold their fragrant petals scattered beneath our feet; but even then we may deduce the moral inference,

> "The *Rose* of the summer is gone,
> The fairest and loveliest one,
> Of mortals an emblem how true!"

As does garden culture convert a desert or a wilderness into a blooming Eden, so will education improve the human mind: but it is wise ever to recollect that man in his most perfect state cannot escape the inevitable doom; for "all flesh is grass, and all the glory of man as the flower of the field; the grass withereth, and the flower fadeth away:" but wisdom, virtue, and the blessings of Christianity never fade, and are never exhausted; they are the eternal fountains of joy, whose waters shall refresh when every other source is dried up.—When gathered, the flowers may be agreeably displayed, and long preserved, in shallow, ornamented pans, composed of tin or china, the lids being pierced to admit the flower-stalks. Both white and red Roses are used in medicine. The former distilled with water yields a small portion of butyraceous oil, whose flavour exactly resembles that of the roses themselves. The oil and the distilled water are very useful and agreeable cordials. These roses also, besides the cordial and aromatic virtues which reside in their volatile parts, have an aperient effect, which remains in the decoction after distillation. The red Rose on the contrary, has an astringent and gratefully corroborant virtue. The leaves of Roses of all kinds, (especially those of *R. canina*,) dried and infused in water, are recommended in Ephem. Nat. Cur. as a substitute for tea, "giving a most pleasant greenness, and in the subastringent taste and grateful smell being equal or superior to tea, and more wholesome." That such an infusion may be less deleterious we can readily imagine; for, though the effect of our foreign tea may be for a while palatable and exhilirating, debilitating and enervating consequences (from which few constitutions are entirely exempt,) will ultimately prevail. Since its general adoption as our daily beverage, nervous disorders have been obviously on the increase; superseding, indeed, in a degree, (as experienced physicians will not deny,) the more natural phlogistic diathesis of the British temperament, but followed by yet more distressing, and too often irremediable, symptoms. Various native herbs have been suggested, at different periods, and by the most enlightened of the medical faculty, as desirable substitutes for the Chinese leaf; but so imperious is fashion, and so prone are her votaries to patronize exotic productions alone, that the fatal abuse seems likely to decline only with the ruined health, and abridged existence, it occasions. For some conclusive experiments on this subject, vid. Percival's Essays. Rose leaves constitute a principal ingredient in the *Pot-pourri*. But the most delicious perfume to be obtained from Roses is in the form of an essential oil, commonly denominated Otter, but according to more correct orthography *Attar*, or *Atar*. It is said to be obtained by the following simple process. Fill any large vessel with the picked petals of Roses; cover them with spring water; expose them to the sun daily for a week; oily particles will rise to the surface, and gradually form a pellicle, which is the Attar, and should be removed by a piece of cotton, and closely corked in small phials. A perfumer in Paris, who made this costly preparation for Louis XVI., declares that four thousand pounds weight of the leaves yielded only seventeen ounces of the oil. Probably in an Asiatic climate the product might be somewhat less scanty. Rose-water was formerly in more general use among the rich and great than in our age, and on state occasions was usually presented in silver-gilt ewers:—

> "Attend him with a silver bason
> Full of *Rose-water*." Shaks.

Among the charges in the account of a dinner of Lord Leycester, Chancellor of the University of Oxford, Sept. 5, 1570, is the item, "*Rose-watrr* to wash afore dinnere, and

Britain; unless indeed, *flore pleno,* at the bottom of a peat bog on Bullington Green, near Oxford, as reported by Mr. Baxter, in Purt. Mid. Fl. E.)

after dinnere." In Damascus hogsheads of this refreshing luxury are sold daily for purposes of cookery. The custom of adorning the memorials of the dead with flowers, the symbols of fleeting mortality; especially with the Rose, as equally the token of affection, (vestiges of which may still be traced in Wales, and some parts of England), prevailed both with the Greeks and Romans: in allusion to which thus Anacreon,—

"Preserves the cold, inurned clay,
And marks the vestige of decay:"

and Propertius:—

"Et tenerâ poneret ossa *Rosa.*"

We learn from Camden that this practice was in his day observed, and has been time out of mind, at Oakley, in Surry, where "the Rose tree is planted on the graves, especially of young men and maidens who have lost their lovers, so that this churchyard is full of them." In the less frequented parts of the principality, the more general recurrence of these pious offerings is calculated to produce an affecting impression even on the passing stranger; but still more strongly to cherish a tender regret for the departed among near and dear relatives, by whom these sacred depositories are annually, if not oftener, visited. Indeed the Rose derives its chief interest from its connection with history and sentiment, and that again originating in its own peculiar charms. In all countries where it is known, and in every age, a redundancy of poetry and song justly attest its pre-eminence; nor is it less distinguished in fable. It has been pronounced by universal acclamation the *Queen of Flowers*:—

"*Rose!* thou art the sweetest flower
That ever drank the amber shower;
* * * * *
* * * * *
Even the gods, who walk the sky,
Are amorous of thy scented sigh."

The Persian Hafez maintains this supremacy among the Oriental gifts of Flora:—

"When the young *Rose* in crimson gay
Expands her beauties to the day,
And foliage fresh her leafless boughs o'erspread;
In homage to her sov'reign pow'r,
Bright regent of each subject flow'r!
Low at her feet the violet bends its head."

The ceremonial of Blessing the Rose is still preserved at Rome, and the day is named "*Dominica in Rosâ.*" Nor were formerly less distinguished honours bestowed upon it in France, at the festival called "*Baillee de Rose,*" when great quantities of Roses were scattered abroad. Englishmen exalt the Rose as their national flower, for ever happily blended with the Thistle and the Shamrock:—

"Emblem of England hail! thou fairest flower,
That paints the garden and perfumes the gale."

Never again may it be debased as the badge of intestine feuds; that contest alone of which it was the emblem, having cost more of English blood than did the twice conquering France: till

" * * The fourth Edward
* * * * * *
* rent the crown from vanquish'd Henry's head,
Rais'd the *White Rose*, and trampled on the *Red.*" Waller.

The Union Rose, a very elegant variety, with mixed red and white petals, has been generally referred to the marriage of Henry VII. with Elizabeth, daughter of Edward IV; by which the animosity of the contending houses was happily and finally extinguished. In connection with this branch of the subject, we find in an old author the following effusion of gallantry on presenting a White Rose to a Lancastrian lady:—

RU'BUS.* *Cal.* five-cleft: *Petals* five: *Styles* from the top of the germen: *Drupa*, clustered, one-celled, fixed to a conical receptacle so as to resemble a berry.

> "If this fair *Rose* offend thy sight,
> It in thy bosom wear;
> 'Twill blush to find itself less white,
> And turn Lancastrian there."

Mythologists tell us that the Rose was originally white, and that the warmer colour was first given to it by the blood of Venus, from an accident thus described by Catullus:—

> "While the enamour'd queen of joy
> Flies to protect her lovely boy,
> On whom the jealous war god rushes;
> She treads upon a thorned *Rose*,
> And while the wound with crimson flows,
> The snowy flow'ret feels her blood, and blushes."

As a token flower, the Rose has ever been deemed sacred to secrecy: hence to speak "under the Rose," refers, (according to the definition of Brown in his Vulg. Err.) in society and compotation, to the ancient custom in symposiack meetings, of wearing chaplets of Roses about the head. Mythological writers afford us the following additional solution:— "That the god of love made Harpocrates, the god of silence, a present of the first Rose, to bribe him not to divulge the secrets of his mother Venus." Hence the Rose became a symbol of silence, and was usually placed above the heads of the guests in banqueting rooms, in order to banish restraint, and intimate that nothing would be divulged that was said "*Sub Rosa*:"

> "'Under the *Rose*' in days of old,
> Fond vows were seal'd, fond secrets told;
> And still, when Love in eve's calm hour
> Would wander to its favourite bower,
> And whisper in its amorous mood
> The thoughts it nursed in solitude,
> The dreams that loving hearts disclose,
> Are sacred underneath the *Rose*.
> And while the constant soul shall be
> Enamour'd of love's secrecy,
> Through varying time's unceasing range
> The language of the lip may change,
> Empires be won, and thrones decay'd,
> Yet never shall this emblem fade,
> For sacred still shall love repose
> Under that faithful flower—the *Rose*."

In Europe the Rose chiefly discloses its odoriferous treasures beneath the unclouded sky; to which the classic strains of Casimir happily allude:—

> "Siderum sacros imitata vultus,
> Quid lates dudum, *Rosa*? Delicatum
> Effer e terris caput, O tepentis
> Filia cœli.
> Jam tibi nubes fugiunt aquosæ,
> Quas fugant albis Zephyri quadrigis;
> Jam tibi mulcet Boream jocantis
> Aura Favoni."

> "Child of the Summer, charming *Rose*,
> No longer in confinement lie;
> Arise to light; thy form disclose;
> Rival the spangles of the sky.

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* (*Rubus* or *ruber*, Latin, *rub*, Celtic, *red*, from the colour of the fruit, and other parts. E.)

(1) *Shrub-like.*

R. IDÆ'US. (Leaves winged, with five or three leafits, hairy beneath; stem nearly erect, prickly; leaf-stalk channelled. E.)

The rains are gone, the storms are o'er;
Winter retires to make thee way:
Come then, thou sweetly blushing flower,
Come, lovely stranger, come away.

The Sun is dress'd in beaming smiles,
To give thy beauties to the day;
Young Zephyrs wait, with gentlest gales,
To fan thy bosom, as they play." Hervey.

Anacreon tuned his sweetest lays in praise of this most distinguished flower, but with these our readers are already familiar; we therefore present a few unpublished lines by the Rev. —— S——y, which will scarcely lose by a comparison even with the gifted song of the Teian:—

"I did not mean to mock the *Rose*,
Nor do her injur'd blossom wrong;
There's not a flower the garden shows
More sacred to the priests of song.

Its fragrance could the Greek inspire,
And breathes in many a Roman line,
Its buds adorn the Persian lyre,
And must not be disgrac'd by mine.

In Spring I watch its first green hue,
Fair promise of a leaf to be;
And, long before it bursts to view,
Its swelling folds have charms for me.

I count each bud with silent hope,
Which Summer ripens into flower;
And when the glowing petals ope,
I treasure them within my bower.

Scarce can the enamour'd Nightingale
More closely woo it for its bride;
The bird which in the Eastern tale,
Sits warbling music at its side.

I love it in its earliest blade;
I love it in its richest bloom;
And when its living blushes fade
I court its memory in perfume."

In Asia prevails the fable of the Rose and Bulbul, so celebrated by Eastern poets.—

"For there—the *Rose* o'er crag or vale,
Sultana to the Nightingale,
Blooms blushing to her lover's tale;
His queen, his garden queen, his *Rose*;
* * * * *
* * * * *
Returns the sweets by nature given,
In softest incense back to heaven;
And grateful yields that smiling sky,
Her fairest hue and fragrant sigh." Byron.

Moore likewise alludes to the same tender sympathy with his wonted fervour.—

"Oh! sooner shall the *Rose* of May
Mistake her own sweet nightingale,
And to some meaner minstrel's lay

Fl. Dan. 788—(*E. Bot.* 2442. E.)—*Woodv.* 138—*Clus.* i. 117—*Dod.* 743. 1—*Lob. Obs.* 619. 2—*Ger. Em.* 1272. 2—*J. B.* ii. 59. 2—*Lonic.* i. 41. 2—*Park. Par.* 559. 1—*Trag.* 973—*Ger.* 1089. 1—*Matth.* 1010.

Open her bosom's glowing veil,
Than love shall ever doubt a tone,
A breath of the beloved one."

But to no poet, ancient or modern, of either hemisphere, has occurred, in contemplating these subjects, a more exquisitely beautiful thought than the following by Witherspoon, though devoid of Oriental embellishment:—

"O gin my love were yon red *Rose*,
That grows upon the castle wa'
And I mysel' a drap o' dew
Into her bonie breast to fa'!

Oh, there, beyond expression blest,
I'd feast on beauty a' the night;
Seal'd on her silk-saft faulds to rest,
'Till fley'd awa by Phœbus light."

Not less emblematic of beauty and loveliness than the Myrtle itself, the Rose most aptly designates the tender passion, by its gradual advance from the bud to the full blown flower; and in its different stages was wont to be mutually presented, and if favourably accepted, was deemed the pledge of future felicity. Nor does the simile end with a wild career of passion: it is equally typical of a more permanent, and ever-enduring attachment:

——— "Because its breath
Is rich beyond the rest; and, when it dies,
It doth bequeath a charm to sweeten death." B. Cornwall.

The Entomologist will find the Rose far from unattractive. The different species nurture the following insects: *Phalæna Salicella, Pavonia, Libatrix, Retularia; Tenthredo Rosæ, Cynosbati; Ichneumon Bedegauris; Cicada Rosæ; Aphis Rosæ; Scarabæus auratus: Musca pellucens;* and those moss-like fibrous excrescences, which are frequently found upon the branches of Roses, especially upon the last species, are the habitations of the *Cynips Rosæ*, (a small fly which piercing the tender plant with its sting, sheds a drop of liquid, together with its eggs. But even this apparently secure depository does not escape the penetrating *Ichneumon*, which bores into the secret chamber, and commits his own destroying egg to the offspring.) The splendid beetle (*Cetonia aurata*), that beds and bathes in sweetness, nestles into the Rose, and sips its nectar. *Coccinella punctata*, (Lady-bird), relieves the Rose, (as it does other plants,) by feeding on the innumerable *Aphides* which often cluster its stem and foliage. These little creatures illustrate the observation of naturalists that the torpidity of insects, as of other hybernating animals, is caused by cold; the same temperature also, in many instances, destroying their usual supply of sustenance. Thus the *Aphis*, which becomes torpid in winter in the open air, retains its activity, and gives birth to a numerous progeny upon Rose trees preserved in conservatories. The beauty of the Rose is often impaired by the froth of *Cicada spumaria*, Cuckoo spit, (than which no insect may be more readily observed, or is more worthy of notice, whilst undergoing its truly surprising transformation:) and also its own peculiar saw-fly, *Tenthredo Rosæ;* (vid. Kirby and Spence's Entom. i. 194.) The miniature instrument with which this insect is furnished is far more complete than any similar invention of human ingenuity, being toothed on each side, (the serratures often serrated, and the exterior flat sides scored and toothed,) so that while the vertical effect is that of a saw, it acts laterally as a rasp. When by the alternate motion, (the instrument being in fact composed of two distinct saws) the incision or cell is made, the two saws, receding from each other, conduct the egg between them into it. The economy of the *Megachile* (*Apis*) *centuncularis* is likewise well worthy of attention. This, and some other species, hang the walls of their little cells with portions of leaves, generally selecting those of the Rose-tree, (though not exclusively); and from the dexterity with which they effect this purpose, they have not

Stems upright, or slightly bent, pale, or purplish brown, three or four feet high, biennial, producing fruit the second year, after which they die down, beset with small prickles. (*Leaves* serrated, their ribs slightly prickly. *Fruit-stalks* rough. *Blossoms* white, pendent, panicled. *Calyx* permanent, woolly, sharp-pointed. E.) *Fruit* red, fragrant, composed of numerous succulent, single-seeded, grains. E.)

RASPBERRY BUSH. FRAMBOISE. HINDBERRY. (Irish: *Maohan Conaire.* Welsh: *Afanllwyn; Mafonen*: Gaelic: *Preas-subh-craoibh.* E.) Woods and hedges, rocky mountains, and moist situations. Grass Wood, near Kilnsay, Yorkshire. Curtis. Thorpe, near Norwich. Mr. Crowe. Berkhampstead, Herts. Mr. Woodward. Woods to the west of Bishop's Aukland. Mr. Hutchinson. (Abundant in woods near Kidderminster, and Coleshill. Purt. Crackley wood, near Kenilworth. Perry. On the summit of Hingsdon Down, near Moreton, Devon. Rev. J. PikeJones. Wood on the south side of Edgbaston pool, Warwickshire, (though perhaps artificially introduced. E.) In wet woods, and in thickets and rough places near rivulets, common about Birmingham: (under circumstances equally suspicious. Plentiful in the wild woods of Wales. Roslyn, Auchindenny, and Arniston woods. Dr. Greville. In the Highlands. Prof. Hooker. E.) S. May—June.*

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inaptly been designated *Leaf-cutter Bees.* Of the process, Reaumur gives a very interesting account. "Nothing can be more expeditious; she is not longer about it than we would be with a pair of scissars. After hovering for some moments over a Rose-bush, as if reconnoitring, the bee alights upon the leaf she has chosen, usually taking her station upon its edge so that the margin passes between her legs. With her strong mandibles she cuts without intermission in a curve line so as to detach a triangular portion. When this hangs by the last fibre, lest its weight should carry her to the ground, she balances her little wings for flight, and the very moment it parts from the leaf, flies off with it in triumph; the detached portion remaining bent between her legs in a direction perpendicular to her body. Thus without rule or compass do these diminutive creatures mete out the materials of their work into portions of an elipse, into ovals or circles, accurately accommodating the dimensions of the several pieces of each figure to each other! Easy is it to perceive by *whom* this humble insect has been taught. The excrescences abovementioned were formerly in repute as a medicine, and kept in the shops under the name of Bedeguar. None of these variations are accidental or common to several of the tribe, but each peculiar to the galls formed by a distinct species of *Cynips.* Superstitious persons may still be found to attest their efficacy in restraining the intemperate passions of the wearer, but as these are chiefly old women, the improved temper may be accounted for more satisfactorily. At least, equally obsolete and ill-founded is the very ancient idea, that "years of store of haws and heps, do commonly portend cold winters;" for, whatever our almanacs may do, few persons of credit will venture now to predict, from what are called natural causes, either a hot summer, or a severe winter. Towards Autumn, scattered on the under side of the leaf, "single and in groups, on a yellow ground; with stems long, and heads elongated, bluntish, black;" will be found the minute fungus, *Puccinia Rosæ.* Grev. Scot. Crypt. 15. Purt. t. 28; nor is it altogether peculiar to this species. Different parts of living Rose-bushes are often infested with whitish tufts of *Erotium Rosarum,* "silky, creeping at the margin; peridia greenish, sessile, globose, very minute; filaments enveloping the peridia, simple, elongated, jointed. Of rapid growth." Grev. Scot. Crypt. 164. 2. E.)

* The fruit is extremely grateful as nature presents it; but made into a sweetmeat, with sugar, or fermented with wine, the flavour is improved. It is fragrant, sub-acid, and cooling. It dissolves the tartarous concretions of the teeth, but for this purpose is inferior to the strawberry. The amber-coloured berries of the garden are sweeter than the crimson; but frequently contaminated by insects. The fresh leaves are the favourite food of kids. (The foliage suffers from the attacks of a little beetle, *Melolontha horticola;*

R. CÆ'SIUS. (Leaves ternate, hairy beneath; lateral ones two-lobed: stem prickly, prostrate, glaucous: calyx embracing the fruit. E.)

E. Bot. 826—*Fl. Dan.* 1213—*Dod.* 742. 2.

Stem three feet long, purplish, branched, with pendent shoots at the top. *Prickles* very fine, scattered, small, bowed back, interspersed between the rough points. *Leaves* green, not cottony, though often downy underneath, serrated; the middle leafit egg-shaped, the lateral ones with generally two lobes. Linn. *Fruit-stalks* round, downy, long, with from one to three flowers, sometimes prickly. *Fruit* composed of fewer and larger granulations, from one to five. Woodw. *Blossoms* white. *Fruit* bluish black, ascescent. (*Stem* prostrate, rod-like, glaucous, radicating. Fl. Brit. E.)

DEWBERRY. (Welsh: *Mwyarllwyn glâs.* E.) Woods and hedges, and balks of corn-fields. Mr. Woodward. S. June—July.*

(Var. 2. *Flore pleno.* Double-flowered. In fields near the vicarage at Keswick; also in Borrowdale. Mr. Winch. E.)

(**R. CORYLIFO'LIUS.** Leafits generally five, hairy beneath; the lateral ones sessile; prickles straightish; calyx reflexed. E. Bot.

E. Bot. 827—*Schmid. Ic.* 2. E.)

Dillenius in R. Syn. 467, seems to have been clear that there were two sorts of *Great Bramble*; but he has not well ascertained their differences. (These have been more recently discriminated by Mr. Crowe, in E. Bot., where the plant is described as having a "*stem* roundish, biennial, not truly shrubby or perennial, much more brittle, so that it is rejected by thatchers who use the other for binding thatch; all the *prickles* nearly straight, not hooked. *Leafits* large, always green on both sides, never white beneath, sometimes very exactly resembling the leaves of a hazel; the lateral ones sessile. *Fruit* earlier, of a browner black, more gratefully acid than in *R. fruticosus*, and composed of rather fewer grains." Notwithstanding this attempt to establish a species, we cannot but greatly doubt these characteristics proving invariable. Mr. Anderson, in Linn. Tr. vol. xi. says the only steady scientific mark of distinction is that of the shoots of *R. fruticosus* being constantly placed on the *ridge* of the angle or furrow of the stem; whereas those of *R. corylifolius*, besides being more slender, more numerous, and of irregular size, are indiscriminately scattered all over the shoot, which is generally round, rarely angled, and more spongy and brittle than in *fruticosus*. Smith adds, the *glands* on the *calyx* and *flower-stalks* also distinguish this plant. E.)

(Var. 3. *R. suberectus.* Anderson. Fruit dark red, not purple.

Linn. Tr. xi. *t.* 16—*E. Bot.* 2572.

The habit approaches nearest to that of *R corylifolius*, with which it is frequently intermixed. It differs in being more upright in its *branches*; in the *leaves* having often seven leaflets, (never the case with *corylifolius* or *fruticosus*,) which are generally more acuminated, and smoother on the upper surface, the undermost and uppermost pair sessile; in the *aculei* being more rare and shorter, and in the *fruit* being dark red, not dark

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when in flower the foot-stalks are sometimes eaten through by the minute *Dermestes tomentosus*, and bees frequently anticipate us by sucking the fruit with their probosces. E.)

* (Gathered by poor people as an agreeable sub-acid fruit. E.)

purple. The whole plant has a darker hue than that of *R. corylifolius.* Anderson. in Linn. Tr. xi. *R. Nessensis.* Hall. Tr. R. Soc. Edin iii. Not of rare occurrence, growing chiefly among loose stones, by way sides, or at the foot of rocks in upland exposed situations. Anderson. E.)

HAZEL-LEAVED BRAMBLE. (Welsh: *Mwyarllwyn cyllddail.* E.) *R. corylifolius.* Anderson in Linn. Tr. v. 11. Sm. Hook. Grev. *R. fruticosus major.* With Ed. 3 and 4. Hedges, thickets, and moors, frequent in England, Scotland, and Wales. In Norfolk, generally intermixed with *R. fruticosus.*

R. **FRUTICO'SUS.** (Leaves of three to five petiolated leafits, hoary beneath; angles of the stem armed with hooked prickles; segments of the calyx reflexed. E.)

(*E. Bot.* 715—*Fl. Dan.* 1163. E.)—*Mill. Ill.*—*Schmid.* 2—*Blackw.* 45. 7—*Kniph.* 5—*Matth.* 1009—*Dod.* 742. 1—*Lob. Obs.* 619. 1. *Ic.* ii. 211. 2—*Ger. Em.* 1272. 1—*Park.* 1013—*Fuchs.* 152—*Trag.* 970—*Ger.* 1089. 2—*J. B.* ii. 59. 1—*Lonic.* i. 41. 1.

Stem angular, purplish, very long, with runners often several times the height of a man in length, spreading and climbing far and wide, and sometimes striking root. *Prickles* alternate, strong, bowed back. *Leaves*, the lower five-fingered, the upper three-fingered, and sometimes simple or with two or three lobes. *Petals* flaccid, white, or purplish. *Stems* always angular. *Prickles* always strong and hooked. *Leafits* usually elliptical, sometimes oval-spear-shaped, serrated, dark green above, white with a close down underneath, sometimes, though rarely, only hairy, and then pale green; the middlemost on a leaf-stalk, the next pair on short leaf-stalks, the lower on shorter leaf-stalks, and sometimes sessile. Woodw. *Prickles* broad at the base and flatted. *Fruit* black. (*Leaves* durable. E.)

Var. 2. (*Fructu albo.* E.) Fruit white, Bark and leaves of a pleasant green.

Hedge near Oxford. Bobart in R. Syn. 467. 2.

COMMON BRAMBLE. BLACKBERRY. (Irish: *Driseog.* Welsh: *Mwyaren ddû.* E) Hedges and woods. (In sequestered denes of the north of England, even at a height of 2,000 feet, this and one or two other hardy species may be observed, where they become all but evergreens. Winch. Geog. Distr. E.) S. June—Sept.*

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* The berries, when ripe, are black, and do not eat amiss with wine; (they are rendered more palatable by being mixed with the juice of sloes. An excellent rob may be prepared from them, particularly grateful as a sub-acid in catarrhs and sore-throats. In dysentery the berries exsiccated in a moderate oven, and afterwards reduced to powder, which may be kept in well-closed bottles, are esteemed an efficacious remedy; as are the roots of another species, according to the practice of the Oneida Indians; it might, therefore, be worth while to attend to the qualities of the roots of our English Bramble. E.) The green twigs are of great use in dying woollens, silk, and mohair, black. Cows and horses eat it. Sheep are not fond of it. Linn. Three horses refused it. Silk worms will sometimes feed upon the leaves in defect of those of the mulberry. Stokes. (Blackberries are extremely attractive to children, and the gathering of them affords a favourite recreation, when,

> ———— "Duly eager of the tempting store,
> Adventurous hands the thorny maze explore."

The long and strong briers make the best standards for boys' kites; and, in times of better feeling, when the disgusting traffic of the body-snatcher was an unheard-of enormity, were considered a sufficient security for binding the sod over rustic graves; from which even to have gathered a flower, planted by the hand of affection, would have been deemed a profana-

(**R. glandulo'sus.** Stems angular: branches and foot-stalks hairy. with glandular bristles interspersed: prickles deflexed, partly hooked: leafits five to three, downy beneath: panicle and calyx very prickly and hairy, with copious glandular bristles.

Stems nearly as stout at the base as those of *R. fruticosus,* but not so tall. *Calyx* hairy, copiously glandular, and more or less armed with straight prickles. The last character, and the prominent glandular bristles of the branches, panicle, and calyx, mark this species well. *Petals* white, narrow. *Fruit* black, of numerous, rather small, *grains.* *Calyx* reflexed.

Glandular Bramble. *R. glandulosus.* Bellardi. De Cand. In woods thickets, and hedges, not uncommon. Sm. Eng. Fl. E.)

(Also nearly allied to *R. fruticosus,* though as yet but imperfectly understood, are several plants, which some foreign authors have attempted to discriminate as species, but which can here be only noticed cursorily to attract further attention: *viz.*

R. plica'tus. Prickles smaller than in *R. fruticosus;* leafits larger, their under surface hoary and finely downy, but not white or cottony: panicle shorter and more corymbose, hairy, not white and downy, nor does it bear scarcely any glandular bristles, according to Smith. E.)

(***R. rhamnifo'lius.*** Prickles more slender, narrower at the base, and less hooked than in *R. fruticosus* or *plicatus:* leafits downy and hairy, with shining white hairs interspersed, beneath, but not pure white and cottony as in *R. fruticosus:* calyx spreading, not closely reflexed even when in fruit: segments without bristles or prickles. Sm. E.)

R. leucosta'chys. In size and mode of growth resembling *R. fruticosus* and *rhamnifolius;* but, according to Mr. Borrer, is distinguishable by its abundant shaggy and shining pubescence, and narrow cluster or panicle. Leaves more jagged, and even the old stems are rarely without hairs. Smith adduces, as a further peculiarity, little glands, scattered over the branches and stalks of the panicle and outside o. the calyx. E.)

(***R. nit'idus.*** A slender plant, with no hoariness, except about the edges and inside of the calyx. Leaves minutely hairy, but not hoary, with

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tion. In Journ. Nat. we find represented, (Pl. iv. f. 3,) what may be frequently observed to disfigure the leaves of this plant, viz., a strongly defined line, meandering over the surface, with a fine intestinal-like line running through the centre. This sinuous course proves to be the pathway of a small caterpillar, (of the tribe *Mineuses* of Reaumur,) which lives upon the parenchyma, or pulpy substance found between the cuticles of the leaves, gradually increasing in size until matured for transformation to the chrysalis, when the insect cuts its way through the leaf, ultimately becoming a moth, remarkable for the brilliant metallic lustre of its wings, the fine central line being the rejectments of the creature in the infant stages of its growth. The author of the above cited work further remarks, "This sadly reprobated plant will flourish greatly, where other and better fences languish, and then, by intertwining its long flexible runners with the weakly products of the hedge-row, will compose a guard, where, without it, we could with difficulty have raised one. Its long tendrils are much used as binding for thatching, being pegged down to prevent the straw coverings of ricks, and such things, being carried away by the winds. Badgers are said to feed much upon the fruit of the Bramble, though probably more so on acorns and crabs."—The leaves of the Bramble are often spotted yellow or brown by *Puccinia Rosæ.* *Hecla Rubi* will also be found upon them. A double flowering variety is considered ornamental in plantations. E) strong prickly mid-ribs. The authors of "Rubi Germanici" indicate two varieties, one with rose-coloured flowers and acid fruit; the other with white flowers and sweet fruit. Sm. E.)

(*R. affinis*. Nearly related to the last, as Dr. Weihe observes, but distinguished from it by its hairy, or hoary, sometimes densely downy, panicle: by a much more hoary calyx; and leafits larger, more pliant, scarcely ever hoary. Sm. E.)

(2) *Herbaceous*:

R. saxa'tilis. (Leaves ternate: stems ascending, slightly prickly, herbaceous, with prostrate runners: panicle with few flowers: calyx of the fruit converging; without prickles or glands. E.)

Hook. Fl. Lond. 154—*E. Bot.* 2233. E.)—*Clus.* i. 118. 1—*Ger. Em.* 1273. 4—*Ger.* 1090. 3—*Park.* 1014. 4—*J. B.* ii. 61.

(Mode of growth resembling that of the Strawberry. Sm. *Leaves* only two or three. E.) *Leafits* generally one on a leaf-stalk, and the rest sessile, sometimes all on leaf-stalks, sometimes all sessile; cut-serrated, pale green, slightly hairy underneath. *Fruit* composed of a few, (one, two, or three, E.) large granulations, when ripe, of a beautiful clear pink, and a pleasant sub-acid flavour. *Blossom* purple, or white. Woodw. (Whole *herb* of a slender, delicate habit. *Stems* solitary, erect, unbranched, a span high. *Panicle* terminal, of a few small, greenish-white flowers, with a pointed calyx and narrow upright petals. E. Bot. E.)

Stone Bramble. (Roebuck Berries, in the Highlands of Scotland. Irish: *Soon-a-man meene*. Gaelic: *Caora-bada miann ; Ruiteaga*. E.) Among stones on the sides of mountains in Yorkshire, Cumberland, and Westmoreland. Llyn y Cwn, near Snowdon. Pennant. Woods about Settle and Ingleton, and not far from the summit of Helsfelnab, near Kendal. Curtis. Helk's Wood, by Ingleton, Yorkshire. Hills opposite Matlock Bath. In Dob Bottom, a deep, woody, rocky dell, opposite the Holme, near Burnley, Lancashire. Mr. Woodward. (Woods at Roslin. Mr. Borrer, in E. Bot. In the wood beyond the Strid, at Bolton. Hailstone, in Whitaker's Craven. East side of Scamer Moor, near Scarborough. Mr. Travis. Moness, and Corra Linn, Scotland. In Castle Eden Dean, Durham. Mr. Winch. (Between Bakewell and Wirksworth. Mr. W. Christy. In great perfection, covering acres of ground, and bearing fine fruit, in the forest of Darnaway, Morayshire. Fl. Lond. Pentland hills. Dr. Greville. Ards, &c. Donegal. Mr. Murphy. E.)
P. June.*

R. arc'ticus. Leaves ternate, bluntly serrated: stem without prickles, bearing one or two solitary flowers: (petals nearly circular. E.)

(*E. Bot.* 1585. E.)—*Fl. Lapp.* 5. 2—*Fl. Dan.* 488.

About a span high. *Flower* purplish. *Berry* dark purple, nearly the size of a mulberry. Linn. (*Stem* upright, angular. *Leaves* (three to five, E.) unequally serrated, almost always smooth. *Calyx* hairy. *Fruit* sweet and fragrant. Fl. Brit.

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* (The badge of the Highland clan M'Nab. The berries are acid, though with sugar might afford an agreeable dessert. In Russia they are fermented with honey, and yield a potent spirit. Hooker. E.)

Dwarf Crimson Bramble. E.) Only found in the Highlands of Scotland; as Isle of Mull. Rev. Dr. Walker. Ben-y-glo, Blair. Mr. Cotton. E. Bot. E.) P. May.*

R. Chamæmo'rus. Leaves simple, plaited; lobed: stem without prickles, single-flowered: segments of the calyx egg-shaped.

Hook. Fl. Lond. 136—*E. Bot.* 716. E.)—*Fl. Dan.* 1—*Fl. Lapp.* 5. 1—*Lightf.* 13. *at p.* 266—*Park.* 1014. 7—*Ger.* 2368—*Ger. Em.* 1420.

Apparently dioecious; but Dr. Solander discovered the roots of the two plants to be united together under ground. Linn. (*Root* creeping. *Stem* hardly a foot high, simple, slender. *Blossom* large, white. *Fruit* of several large, dull orange-coloured granulations. *Leaves* heart-shaped, plicate, unequally serrated, on leaf-stalks. Glands or abortive stamens are constantly present around the germens of the fertile flowers. Hook. Fl. Lond. E)

Cloud-berry, (from its elevated place of growth. E.) **Mountain Bramble. Knot** or **Knout-berries.** (Gaelic: *Lusnan-Eighreag.* E.) Peat bogs on the sides of the mountains of Yorkshire, Westmoreland, Cumberland, Lancashire, Carnarvonshire, and Scotland. Sides of the highest mountains about Settle and Ingleton. Curtis. Ingleborough, Yorkshire. Mr. Woodward. Near Egleston, Durham. Mr. Hutchinson. (On Cheviot. Mr. Winch. Glen-Garro mountain, Tyrone. E. Murphy, Esq. E.) P. May—June.†

FRAGA'RIA.‡ *Calyx* ten-cleft: *Petals* five: *Seeds* naked, smooth, on an egg-shaped, coloured, deciduous, berry-like receptacle.

F. ves'ca. Runners creeping, (hairs of the foot-stalks widely spreading; those of the partial flower-stalks adpressed, silky. Sm. E.)

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* (From the fruit may be prepared a highly flavoured sweetmeat, and a rich wine, much esteemed in Sweden. Dr. Clarke represents the flavour of the berries as finer than that of the hautboy strawberry; and their fragrance, when fresh gathered, delicious. A most elegant species, worthy of cultivation both for ornament and use; but it will not flourish without bog earth. E)

† The berries are not unpleasant, and held to be an excellent anti-scorbutic. The Norwegians pack them up in wooden vessels and send them to Stockholm, where they are served in desserts, or made into tarts. The Laplanders bury them under the snow, and thus preserve them fresh from one year to another. They bruise and eat them with the milk of the rein deer, (and sometimes make a jelly of them boiled with fish. E.) In the Highlands of Scotland also they are occasionally brought to table. Dr. Clarke considered his life to have been saved by the febrifuge quality of this fruit. In Lapland, that celebrated traveller observes, "Whenever we walked near the river, we found whole acres covered with these blushing berries, (at first crimson, afterwards becoming yellow,) hanging so thick that we could not avoid treading upon them—Although they flourish most in marshy places, their roots do not strike into the swamp, but are found covering the hard and dry mounds of earth which rise above it." vol. iii. p. 376. A sprig of the Cloudberry bush is the distinguishing badge of the clan M'Farlane. The Caledonian Horticultural Society recommended the cultivation of this plant by seed. Hooker. According to Mr. Bicheno it indicates the presence of slate. E.) *Papilio Rubi*, *Phalæna*, *Pavonia*, *Fascelina*, and *Sambucaria*, are nourished by the different species.

‡ (Generally supposed from *fragro*; referring to the fragrance of the fruit; but perhaps with as much propriety from *frango*, as a lithonthriptic. E.)

Blackw. 77. 1—*Ludw.* 136—*Kniph.* 8—(*E. Bot.* 1524. E)—*Sheldr.* 3. 6—*Dod.* 672. 2—*Ger. Em.* 997. 1—*H. Ox.* ii. 19. *row* 1. 1. *f.* 2—*Pet.* 40. 7—*Fuchs.* 853—*J. B.* ii. 395. 3—*Trag.* 500—*Lonic.* i. 215. 1.

(*Root* blackish. E.) When growing in woods the segments of the *calyx* cloven at the point. Reich. *Wires* long, slender, smooth, often tinged with purple; radicating at intervals, and producing new plants. *Leaf-stalks* hairy. *Leaves* ternate, pubescent beneath; *leafits* egg-shaped, serrated. *Fruit-stalks* with two or more flowers. (*Blossoms* white, erect. *Fruit* red, nutant, fleshy, fragrant, well-flavoured. *Seeds* granular, external. E.)

WOOD STRAWBERRY. (Welsh: *Mefusen y goedwig.* Gaelic: *Subh-lair; Subh-thalmhainn.* E.) Woods, thickets, hedge banks, &c.

Var. 2. Huds. Fruit harsh, rough, and prickly, greenish, with some show of redness. Blossoms greenish. Ger. Em

Hyde Park: Hampstead wood. Merret.

Var. 3. Fruit white.

Common in woods, hollow-ways, and hedge, banks, particularly in marl or clayey soil. P. May–June.*

(*F. elatior*, E. Bot. 2197, is larger and more hairy than the preceding, and seems to defy specific distinction. Ehrhart and Smith supposed it might be essentially discriminated by the hairs on the peduncles being "patent and even deflexed;" but Hooker and Borrer find them sometimes "quite erect and appressed." Neither are the flowers invariably dioecious, though often so. The fruit is larger, darker, of a musky flavour, like the true Hautboy of the gardens, which it is not improbable may have originated from this plant. E.)

F. STER'ILIS. Stem prostrate, without creeping runners: (leafits obovate, deeply serrated, silky on both sides, especially beneath. E.)

Curt. 173—(*E. Bot.* 1785—*Fl. Dan.* 1579. E.)—*Vaill.* 10 1—*Lob. Ic.* i. 698—*Ger. Em.* 998—*Pet.* 40. 8—*J. B.* ii. 395—*H. Ox.* ii. 19. 5.

Shoots thick, depressed, covered with spear-shaped stipulæ of the colour of rusty iron. *Leaves* ternate, inversely egg-shaped, serrated, flexible, hairy, white underneath. *Leaf-stalks* very hairy. *Flowering-stems* thread-shaped, with a few small leaves. *Flowers* solitary, white, on fruit-stalks. Linn. (Curtis considers this plant as forming the connecting link between the *Fragaria* and *Potentilla*, having the leaves of the former, but in fructification more resembling the latter. *Seeds*, according to Mr.

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* Strawberries, either eaten alone, or with sugar, or milk, are universally esteemed as a delicious fruit. They are grateful, cooling, sub-acid, juicy, and have a delightful smell. Taken in large quantities they seldom disagree. They promote perspiration, and dissolve the tartarous incrustations upon the teeth. Persons afflicted with the gout or stone have found great relief by using them largely; and Hoffman says, he has known consumptive patients cured by them. The bark of the root is astringent. Sheep and goats eat it. Cows are not fond of it. Horses and swine refuse it. (*Cicada spumaria*, (Cuckoo-spit, or Froth-worm,) enveloped in a spume exuded by itself, and wherein the little animal may be seen in time to acquire four tubercles on its back, in which wings are inclosed; these bursting, from a reptile it becomes a winged creature; and thus rendered perfect, flies to meet its mate, and fulfil its destiny in perpetuating its kind,—a familiar example of wonder-working power, well worthy of attention, E.) may be frequently observed upon the leaves. *Coccus polonicus* infests the roots. (See experiments on Esculent Strawberries by T. A. Knight, Esq. in Linn. Tr. vol. xii. E.)

Borrer, not decidedly "smooth and even," as in *Fragaria*; but rather "transversely wrinkled or rugose," as in *Potentilla*. Gmelin esteems it a *Comarum*, and calls it *C. Fragarioides*. Roth also thinks it should be referred to the genus *Comarum*, as having no berry-like, deciduous receptacle, but one that is dry, spongy, and permanent. We must, however, agree with the writer of the Botanical Report, Month. Mag. v. 24, that the *succulent* or *dry* state of the receptacle, even combined with a slight variation in the surface of the seed, does not seem sufficient to divide the genus. In a case of difficulty the *habit* should always have great weight, and in this respect it is altogether a *Fragaria*. E.)

Barren Strawberry. (Welsh: *Coeg-fefusen*. *F. sterilis*. Linn. Lightf. Huds. With. Curt. Sm. Fl. Brit. and E. Bot. Ray. Bauh. Willd. Hoffm. Oed. *Potentilla Fragariastrum*. Ehrh. Sm. Eng. Fl. *P. fragaria*. De Cand. Hook. Grev. *P. fragarioides*. Villars. E.) Barren pastures, heaths, and hedge banks. P. April—May.*

POTENTIL'LA.† *Calyx* ten-cleft: *Petals* five: *Seeds* roundish, naked, wrinkled, attached to a small, juiceless, spongy, tubercled receptacle.

(1) *Leaves pinnate.*

P. fruticosa. Leaves winged, entire, hairy: stem shrubby. •

Dicks. H. S.—*E. Bot.* 88—*Kniph.* 5—*Walc.*—*H. Ox.* ii. 23. *row* 3. *f.* 3*d.*—*R. Cat. Ed.* ii. *at p.* 228—*Pet.* 41. 8—*Amman.* 17 *and* 18. 1.

(*Stem* upright, tinged with red, much branched, three feet high. E.) Whole *plant* set with fine silvery hairs. *Leafits* about an inch long, strap-spear-shaped, turned back at the edges, dark green above, pale underneath. *Leaves* hardly to be called winged, consisting of two pairs set crosswise, rising from the same point, with a terminal one divided down to the base into three open segments. *Blossom* yellow.

Shrubby Cinquefoil. On the south bank of the Tees below Thorpe, and Egleston Abbey; and also near Greta Bridge, and Mickle-Force, Teesdale, Yorkshire. Ray. Mr. Robson assures me that it still grows in great abundance upon these spots. (At Wince Bridge, Durham. Mr. Winch. E.) S. June.*

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* (Both species of *Fragaria*, (from whence originate the numerous cultivated sorts), are subject to *Uredo Fragariæ*, "in roundish dots, on the under side the leaves; bright yellow, changing to dark brown."—Besides the discolouration on either surface of the leaves, principally occasioned by fungi or insects, spots are often apparent, generally of a dark hue, and not unfrequently observable on different kinds of Strawberry plants, for which no such origin can be detected. A probable cause of these appearances was many years ago suggested to me by my late very ingenious and learned friend Professor Robison; who conjectured that they were in most instances produced by the power of the sun acting upon a globular drop of dew, or perhaps sometimes of rain, as through a burning lens, the rays becoming thus so concentrated as to incinerate, more or less, the portion affected. In a recent publication (Journ. Nat.) we observe something like the same hypothesis propounded.—Dr. Mason Good, in his "Book of Nature," remarks, "Among animals some are locomotive or migratory, and others stationary or permanent, (including the zoophite order), though the greater number may be migratory. Plants are, on the contrary, for the most part stationary, yet many are fairly entitled to be regarded as locomotive or migratory, of which the genus *Fragaria* affords examples; as do the palmate, the testicular, and the premorse rooted tribes, offer similar proofs. Many of these grow from a new bulb or knob, or radicle, while the old root dies away; we may therefore conclude that the vital principle of the plant has quitted an old dilapidated, and ruinous mansion, to take possession of a new one." And thus several of the *Orchidiæ*, or *Scabiosa succisa*, may sometimes be traced in their change of position across half an acre. E.)

† (Diminutive of *potentia*, power or efficacy; from its supposed medicinal virtues. E.)

P. ANSERI'NA. Leaves interruptedly winged, serrated, silky: stem creeping: fruit-stalks single-flowered.

Curt. 203—(*E. Bot.* 861. E.)—*Fl. Dan.* 544—*Matth.* 1016—*Dod.* 600. 1—*Lob. Ic.* i. 693. 1, *Obs.* 395. 1—*Ger. Em.* 993—*Park.* 593—*Ger.* 841—*Pet.* 41. 11—*Fuchs.* 619—*J. B.* ii. 398. *h.*—*H. Ox.* ii. 20. *row* 2. 4—*Trag.* 480—*Lonic.* i. 240. 2—*Blackw.* 6.

(*Stems* procumbent, occasionally reddish, radicating and producing leaves and flowers from the joints. E.) With long creeping runners. *Leaves* silvery and white underneath, (three to six inches long. E.) *Leafits* curiously plicate, lanceolate. *Receptacle* hairy. *Blossom* large, yellow. (Sometimes the *leaves* are nearly destitute of that silky down which gives them their chief beauty.

SILVER-WEED. WILD TANSY. (The old name ARGENTINE, from the silvery hue of the foliage, is almost equally applicable to *P. argentea.* E.) (MOOR GRASS, in Scotland. Irish: *Brisclan.* Welsh: *Tinllwyd; Gwyn y merched.* Gaelic: *Bar-a'-bhi isgein.* E.) Sides of paths and roads, and in low pastures, especially where water has remained stagnant during winter. P. June—July.†

P. RUPES'TRIS. (Stem erect, without runners: leaves lyro-pinnate, in sevens, fives, and threes: leafits ovate, serrated, hairy. E.)

Jacq. Austr. 114—(*E. Bot.* 2058. E.)—*Clus.* ii. 107. 1—*Ger. Em.* 991—*Park.* 397. 7—*Pet.* 41. 6—*J. B.* ii. 398. *d.* 2—*H. Ox.* ii. 20. *row* 1. 1—*Kniph.* 11. *very luxuriant.*

Whole *plant* hairy. *Stem* forked upwards, a foot high, striated, reddish, many-flowered. *Leaves, serratures,* and *segments of the cup,* tipped with scarlet or purple. (*Petals* inversely heart-shaped, white. *Styles* reddish. *Seeds* smooth, not furrowed; in this and other appearances, somewhat resembling a *Fragaria.* E.)

STRAWBERRY-FLOWERED CINQUEFOIL. On the sides of Craig Wreiden, (or Breddin,) Montgomeryshire. Ray. (Gathered there in 1817, by Mr. J. E. Bowman. Eng. Fl. E.) P. July.

(P. TRIDEN'TATA. Leaves ternate, wedge-shaped, smooth on the upper surface, hairy beneath; trifid at the end.

E. Bot. 2389—*Ait. H. Kew.* v. 2. *t.* 9.

At least equalling any of its genus in beauty. (*Root* reddish brown. *Stems* panicled, erect, three or four inches high, reddish, hairy. *Seeds* smooth, with a tuft of hairs about the top. Each *leafit* an inch long. *Cal.* purplish. *Radical-leaves* on channelled *foot-stalks,* exceeding their own length. Sm. E.) *Flowers* white, three or four on each stem.

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* (The beautiful appearance of its numerous flowers has gained it admittance into gardens. Besoms are made of it. Cows, horses, goats, and sheep it. Swine refuse it.

† The leaves are mildly astringent. Dried and powdered they have been given with success in agues. The usual dose is a table spoonful of the powder every three hours between the fits. The roots in the winter time eat like parsnips. Swine are fond of them. (Lightfoot states that in the islands of Tiras and Col, the inhabitants have been occasionally relieved from famine by the use of these roots, which abound in their poor pasture grounds. Cows, horses, goats, and swine eat the plant. Sheep refuse it. E.)

THREE-TOOTHED CINQUEFOIL. Discovered by Mr. G. Don, on a mountain called Warron, and on the eastern rocks of Clova, in Angus-shire. P. May—June. E.)

(2) *Leaves digitate.*

P. **ARGEN'TEA.** Leafits quinate, wedge-shaped, jagged, cottony beneath: stem ascending.

E. Bot. 89—*Fl. Dan.* 865—*Matth.* 1020—*J. B.* ii. 398. *c.* 1—*H. Ox.* ii. 19. 11.

Stems numerous, woody, reclining, a foot or more in length, cylindrical, downy, forked upwards. *Branches* axillary. *Leaf-stalks* of the lower leaves long, gradually shortening upwards. *Leaves* green above, white and cottony underneath; lower ones alternate, with five divisions; segments wedge-shaped, entire towards the base, but wing-cleft towards the ends. *Floral-leaves* with one or three strap-shaped, entire, segments. *Calyx* downy, as long as the blossom. *Petals* small, yellow, soon shedding. Robs.

SILVERY or HOARY CINQUEFOIL. Meadows and pastures in a gravelly soil. Side of the turnpike road in the parish of Holt Castle, Worcestershire. Mr. Ballard. On Blackheath. Mr. Jones. About Harrowgate plentiful. Mr. Robson. (Hill of Kinnoul, Perth; between Dorking and Bletchworth, Surry; between Hexham and Beaufront, Northumberland; near South Shields, Durham. Mr. Winch. E.) P. June—Sept.

P. **REP'TANS.** Leaves quinate: leafits obovate, serrated: stem creeping: stalks axillary, single-flowered.

(*E. Bot.* 862—*Fl. Dan.* 1164. E.)—*Kniph.* 7—*Ludw.* 116—*Curt*—*Woodv.* 59—*Walc.*—*Lonic.* i. 216. 2—*Fuchs.* 624—*J. B.* ii. 397—*Lonic.* i. 216. 1—*Blackw.* 454—*Matth.* 1018—*Ger.* 836. 1—*Dod.* 116. 1—*Lob. Ic.* 690. 1, *Obs.* 393. 3—*Ger. Em.* 987. 1—*Pet.* 41. 3—*Park.* 399. 1—*H. Ox.* ii. 19. 7.

(*Peduncles* solitary, longer than the leaves. *Calyx* hairy. *Petals* yellow, large. E.) *Stem* sometimes extending several feet. *Fruit-stalks* cylindrical. *Leaves* opposite, in pairs, segments ending in purplish points. *Leafits* sometimes three. *Flower-scales* spear-egg-shaped, in pairs. *Tormentilla reptans* has been thought a var. of this; but, not to mention other differences, *P. reptans* has a creeping stem striking out roots at the joints, *T. reptans* a trailing stem not striking root. Afzel. Mr. Dawson Turner, however, states, that a plant of *T. reptans* transplanted into his garden three years ago, has by culture gradually approached nearer and nearer to *Potentilla*, till it is now hardly to be distinguished from it, and of its flowers at this time almost equal proportions bear four or five petals. E.)

COMMON CREEPING CINQUEFOIL. FIVE-LEAVED GRASS. (Irish: *Meagigh.* Welsh: *Pumnalen gyffredin ymlusgaidd.* E.) Meadows, pastures, and road sides. P. June—Sept.*

P. **VER'NA.** (Root-leaves of five or seven sharply serrated, furrowed leafits, hairy at the margins and ribs beneath: stems procumbent: petals obcordate, longer than the calyx. E.) stem-leaves ternate.

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* The red cortical part of the root is mildly astringent and antiseptic. A decoction of it is a good gargle for loose teeth and spongy gums. Horses, cows, goats, and sheep eat it.

E. Bot. 37—*Kniph.* 8—*Allion.* 24. 2—*Clus.* ii. 106. 2—*Ger. Em.* 988. 8—*J. B.* ii. 398. *a.* 1—*Crantz.* ii. 1. 1.

Root below clothed with broad rusty-coloured scales, but throwing out several stems from its head. *Stems* not creeping, ascending, purplish, much branched, slightly sprinkled with hairs, many flowered. *Petals* yellow, notched, with or without a tawny spot at the base. *Stamens* and *pistils* yellow. *Plant* when grown to maturity nearly smooth. Linn. Whole *plant* beset with soft, shining, silky hairs. *Root-leaves* roundish, on long leaf-stalks. *Leafits* wedge-shaped, sessile, serrated, and truly dented at the end, entire downwards, the upper one the largest. *Stems* numerous, (several inches long, spreading in patches. E.) *Stem-leaves* three-cleft *Leaf-scales* in pairs, spear-shaped, embracing the stem. *Fruit-stalks* terminal and axillary, long, slender, each with one flower. *Floral-leaves* spear-shaped. *Calyx* segments not very unequal, half as long as the blossom. *Petals* inversely heart-shaped. Woodw.

SPRING CINQUEFOIL. Rocky mountainous pastures. Near Preston. Giggleswick, Yorkshire; Gloggaeth, Carnarvonshire. Pennant. Near Finlarig, Breadalbane. King's Park, Edinburgh, on the south-west side of Arthur's Seat. Dr. Hope. Near Carr End, Wensleydale, Yorkshire. Curtis. Canham Heath, near Bury, Suffolk. Mr. Woodward. Braid Hills and Craig Lochart, near Edinburgh. Mr. Brown. Wick Cliffs, Glostershire. Rev. G. Swayne. P. April—June.

(P. OPA'CA. Radical-leaves of seven hairy, linear-wedge-shaped leafits, deeply serrated throughout: stem-leaves ternate, mostly opposite: stems recumbent.

E. Bot. 2449—*Jacq. Ic. Rar.* 91.

Leafits constantly seven, dark green, with numerous deep marginal serratures. *Flowers* numerous, on long, simple, solitary, axillary, or panicled and bracteated, downy, hairy *stalks*. *Cal.* hairy, its outer segments narrow, as long as the rest. *Petals* the same length, bright yellow, orange coloured towards the base. *Seeds* corrugated.

Not so nearly resembling *P. verna* as authors have imagined.

SAW-LEAVED HAIRY CINQUEFOIL. *P. opaca.* Linn. Willd. Jacq. Hall. Nestl. Don. Sm. Hook. Received from Scotland by the late Mr. Don of Cambridge. Hills of Clova, Angus-shire: Braes of Balquidder, Perthshire. Mr. G. Don. P. June. Sm. Eng. Fl. E.)

(P. ALPES'TRIS. Radical-leaves of five wedge-shaped, somewhat hairy leafits: deeply cut in their upper half: upper stipulæ ovate: petals heart-shaped: stems ascending. E.)

(*E. Bot.* 561. E.)—*Fl. Dan.* 114.

This has been suspected to be a var. *P. verna*, but its habit is very different.

Stems decumbent at the base, then ascending, from four to eight or ten inches high, branched, leafy, somewhat compressed, loosely hairy. *Calyx* externally hairy; segments acute, somewhat unequal. *Petals* tawny yellow, or orange, inversely heart-shaped, as long, or longer than the calyx.

P. alpestris, (as ascertained by Haller, jun. and sanctioned by Smith, hitherto denominated *P. aurea* by most authors,) is an extremely variable species; but the entire bases of the wedge-shaped *leafits,* and the deep wide segments of their upper part, destitute of the silvery margin of *P. aurea,* are characteristic. Sm. E.)

GOLDEN CINQUEFOIL. Pastures near Kippax, three miles from Pontefract. Ray. (Rocks of Malghyrdy; Ben Teskerney, Ben Lawers, and Craig Cailleach. Mr. Brown. Rocks above Gordale Scar, Yorkshire. Mr. Brunton. Near Corbridge Mill, Northumberland: and on basaltic rocks at Wince Bridge, Teesdale. Mr. Winch. E.) P. June—Aug.

(*P. alba* admitted on rather slight authority, and without any precise station, in the time of Hudson, has never been found since in Britain. E.)

TORMENTIL'LA.* *Calyx* eight-cleft: *Petals* four: *Seeds* naked, beardless, fixed to a small juiceless receptacle.

T. OFFICINA'LIS. Stem somewhat ascending, branched: leaves sessile.

Kniph. 6—*Ludw.* 174—*Curt.* 337—(*E. Bot.* 863. E.)—*Blackw.* 445—*Fl. Dan.* 589—*Woodv.* 27—*Park.* 394. 1—*Fuchs.* 260—*J. B.* ii. 398. *g.* 2—*Sheldr.* 47—*Trag.* 503—*Matth.* 977—*Dod.* 118—*Lob. Obs.* 395. 2: *Ic.* 696. 2—*Ger. Em.* 992—*H. Ox.* ii. 19. 13—*Pet.* 41. 9—*Ger.* 840.

Stems generally declining, (six to eight inches long, slender. E.) *Flowering branches* ascending. *Leaf-scales* in pairs, wedge-shaped, deeply divided into three or more lobes, Woodw. *Leaves* of a beautiful green, ternate. *Root-leaves* on leaf-stalks. *Leaf-stalks* shorter than the breadth of the leafits. *Leafits* serrated. *Calyx,* the four smaller segments on the outside of the other four. *Petals* sometimes five, of a fine yellow, orange-coloured at the base; claws very short. *Stamens* fourteen to eighteen. *Pistils* six to sixteen. *Receptacle* woolly. (*Root* large and woody. *Flowers* sometimes, though rarely, double; drooping before expansion. E.)

Unwilling as we are to change a Linnæan name, his trivial *erecta,* (upright), given to the present species, is so very inapplicable that we have chosen, with Curtis, to call it *T. officinalis.*

SEPTFOIL. COMMON TORMENTIL. (Irish: *Neaunadis.* Welsh: *Tresgl-y moch; Melyn y twynau.* Gaelic: *Bàr-braonan-nan-con.* E.) *T. erecta.* Linn. Huds. Lightf. Relh. Hull. Willd. *T. officinalis.* Curt. Sm. Hook. Purt. *Potentilla sylvestris.* Neckar. *P. Tormentilla.* With. Ed. 2. Sibth. Abbot. Grev. Moors, barren pastures, and shady places.

P. June—Sept.†

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* Diminutive of *tormen,* the cholic, certain plants of this genus having acquired credit as a remedy for such complaints. E.)

† The roots may rank with the strongest vegetable astringents, and as such have a place in the modern practice of physic. They are used in several countries to tan leather. Farmers find them very efficacious in the dysenteries of cattle. They dye red. Cows, goats, sheep, and swine eat it. Horses refuse it. Linn. A horse eat it. (M. Hermestadt, of Berlin, asserts, that a pound and a half of Tormentil will tan as much dry hide as seven pounds of oak bark. Month. Mag. v. 19. Bulleyn, in his "Book of Simples," asserts, on the authority of the Norfolk shepherds, that Tormentil in pastures prevents that very destructive disease the rot in sheep.—Abundant in the Orkney and Western Isles, where the roots are in much request by the inhabitants. E.)

T. **REP'TANS.** Stem prostrate, scarcely branched: leaves stalked.

(*E. Bot.* 864. E.)—*Walc.*—*Plot Ox.* 9. 5. *at p.*146—*Pet.* 41. 10.

(*Stems* two feet long, not radicating. All the *leaves* on leaf-stalks. *Leafits* ternate, wedge-shaped, generally on short leaf-stalks, serrated upwards, entire at the base; the upper frequently three-cleft. *Stipulæ* spear-shaped, entire, with two or three clefts. (*Stem* undivided. Segments of the *calyx* egg-spear-shaped, unequal, hairy. *Petals* roundish, heart-shaped, yellow. *Flowers* much larger than those of the preceding. E.)

In a garden sometimes producing five petals, and ten clefts in the calyx, which confirms the opinion of those who maintain that *Potentilla* and *Tormentilla* are not distinct genera: (and hence Scopoli, on abolishing the latter genus, acutely queries, "Monoculum hominem ab humano genere quis separabit?" E.) But independent of the generic character, this species, as Dr. Afzelius remarked to me, differs from *P. reptans,* in having a *trailing* stem which does not strike root at the joints, whilst that has a creeping stem which takes root at every joint.

(TRAILING TORMENTIL. Welsh: *Tresgl ymlusgaidd.* E.) Woods and sandy barren pastures. About Manchester. Mr. Caley. Lakenham, near Norwich. Mr. Crowe. Berkhamstead, Herts. Mr. Woodward. (At Bootle Land-mark, near Liverpool. Dr. Bostock. Near the boat-house, Sandgate East, Kent. Mr. G. E. Smith. On Holyhead mountain, and banks near Llysdulas, Anglesey. Welsh Bot. Road-side between Hamilton and Cambuslang. Mr. Murray. Near Kirkcaldy. Mr. Stewart. Hook. Scot. E.) P. June—July.

GE'UM.* *Cal.* ten-cleft: *Petals* five: *Styles* terminal: *Seed* with a jointed awn: *Receptacle* columnar.

G. **URBA'NUM.** Flowers upright: awns hooked, bare: root-leaves lyre-shaped: stem-leaves ternate.

(*E. Bot.* 1400. E.)—*Ludw.* 36—*Cam.* 113—*Kniph.* 9—*Blackw.* 253—*Walc.*—*Fl. Dan.* 672—*Fuchs.* 381—*Woodv.* 259—*Pet.* 40. 1—*Ger.* 842. 1—*Matth.* 984—*Clus.* ii. 202. 2—*Dod.* 137. 1—*Lob. Ic.* 693. 2; *Obs.* 396. 2—*Ger. Em.* 994. 1—*Park.* 136. 1—*H. Ox.* iv. 26, *row* 2. 1 *and* 2.

Stem somewhat angular, (about two feet high, hairy, upright, branched towards the top, leafy. E.) *Leaves* winged, hairy, with two pair of leafits; the lower pair circular, jagged and toothed, unequal; the upper pair egg-spear-shaped, jagged and toothed; and a terminal one larger than the rest, frequently cloven into three segments. The first pair Linnæus considers as stipulæ. *Petals* yellow, small. *Germens* hairy. *Styles* smooth, purple, with a double flexure towards the end.

COMMON AVENS. HERB BENNET. Irish: *Macul.* Welsh: *Mabgoll; Llys Bened.* E.) Woods and hedges. P. June—Aug.†

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* (From γευω, to give out a flavour; from the agreeable aromatic quality of the roots. E.)

† The roots, gathered in spring, before the stem grows up, and put into ale, give it a pleasant flavour, and prevent its turning sour. Infused in wine they are a good stomachic. Their taste is mildly austere and aromatic, especially when growing in warm dry situations; but, in shady and moist places, they have little virtue. Cows, goats, sheep, and swine eat it. Horses are not fond of it. (Dr. Swediaur strongly recommends the root of this plant gathered early in the spring from a dry soil, as an excellent substitute for the Peruvian Bark, in intermittent fevers. Mat. Med. p. 9[illegible]. As a febrifuge it was known to Ray, and has been recently brought into notice by Buckhave Half a drachm or a drachm of the powdered root may be given four times a day. As an indigenous astringent [illegible]erves notice, says the author of Edin. Dispens. E.)

Var. 2. *Fl. maj.* *Large-flowered.* Huds. (*G. intermedium.* Ehrh. With. Ed. 6. *G. urbanum* β. Sm. Somewhat larger in the petals, and more tawny, than the common appearance. Suspected to be a hybrid between *G. urbanum* and the following species; though Messrs. Curtis and Robson report it to be unaltered by garden culture. E.)

Fuchs. 385—*Trag.* 37.

Tedford Wood in the Welds, Lincolnshire; and in Cambridgeshire. Ray. (In a low shady grove, by the river, at Matlock Bath. Sir J. E. Smith. Banks of the Esk, above Newbattle. Dr. Graham. Grev. Edin. Near St. Helen's Well, and other spots, near Darlington. Mr. Robson. In woods at Fryar's Goose on the Tyne. Mr. Winch. E.)

G. RIVA'LE. Flowers pendulous: awns feathered, twisted: petals blunt, roundish wedge-shaped: radical leaves winged, somewhat lyrate.

E. Bot. 106—*Fl. Dan.* 722—*Kniph.* 1—*Lob. Ic.* i. 694—*Clus.* ii. 203. 1—*Ger. Em.* 995. 4—*Pet.* 40. 3—*H. Ox.* iv. 26. 7—*J. B.* ii. 398. *n.* 2.

Upper-leaves with three or four lobes. *Leaf-scales* undivided, or jagged. *Fruit-stalks* purplish, becoming less bent when the seeds ripen. *Calyx* oblong, flat at the base, greenish purple, cloven half way down. *Blossoms* streaked, of a dilute tawny red. (*Root* horizontal, rather woody. *Stem* a foot high, upright, branches at the top nutant. *Root-leaves* plaited, cut, serrated, hairy. E.)

Var. 2. *Flore pleno.* Flowers double; sometimes proliferous; (so found near Castle Eden by Mr. Winch. This is certainly "no hybrid," says Sir J. E. Smith, who states that by transplanting the wild roots into a dry gravelly soil, the flowers become red, as well as double and proliferous, with many strange changes of leaves into petals, and the contrary. E.)

WATER AVENS. (Welsh: *Mabgoll glan y dwr.* E.) Mountainous pastures and woods not unfrequent in the north of England, in Scotland, and Wales. P. June—July.*

DRY'AS.† *Cal.* five or ten-cleft: *Petals* five or eight: *Seeds* with tails, formed by the feathered style: *Receptacle* broad and flat.

D. OCTOPE'TALA. Petals eight: leaves simple, (serrated, downy beneath. E.)

(*E. Bot.* 451. E.)—*Penn. Hebr.* 33. *at p.* 285—*Fl. Dan.* 31—*Clus.* i. 351. 2—*Ger. Em.* 659. 6—*Ger.* 533. 4—*Lob. Adv.* 209, *Ic.* i. 495. 1—*Gisec.* iii. 66—*Lob. Obs.* 260. 2, *Ic.* 495. 2—*Park.* 106. 1.

(*Root* woody. *Stems* short, scaly, with the shrivelled bases of old leaves, decumbent, intangled, woody; branches leafy, upright. *Leaves* on leaf-stalks, at the edges revolute, evergreen, about an inch long, serrated, egg-shaped, smooth and shining above, cottony, with a reddish rib beneath. *Fruit-stalks* solitary, upright, very long, woolly, towards the end rough with glands. *Calyx* glandulous, hairy, with eight segments, nearly equal. *Flowers* large, white, solitary. E.)

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* The powdered root will cure tertian agues, and is daily used for that purpose by the Canadians. Sheep and goats eat it. Cows, horses, and swine are not fond of it. Linn. It is made use of to cure ropy malt liquor. St.

† (So called by Linnæus from the DRYADES, to whom the Oak, Δρυς, is sacred; the leaves bearing some resemblance to those of that tree. E.)

Mountain Avens. High mountains, (chiefly in micaceous or calcareous soil. E.) On those between Gort and Galloway, and near Sligo, in Ireland; and on those in Breadalbane, Isle of Skye, Ross-shire, Sutherland, and Argyleshire. Ray, and Messrs. Stuart and Lightfoot. On Arncliff Clowder, in Littendale, near Kilnsay, Yorkshire. Curtis. Near Settle. Dr. Fell. (Near the Black Ark, on Cronkley Fell, Teesdale. Mr. Winch. E.) P. June—Aug.

CO'MARUM.* *Cal.* ten-cleft, permanent; segments alternately smaller: *Petals* five: *Seeds* naked, smooth: *Receptacle* globular, spongy, hairy, permanent.

C. PALUS'TRE.

Dicks. H. S.—*Kniph.* 9—*Fl. Dan.* 636—*E. Bot.* 172—*Ger.* 836. 4—*J. B.* ii. 398. *c.* 2—*Dod.* 117. 2—*Lob. Ic.* 691. 1—*Ger. Em.* 987. 4.

(*Stems* about a foot in height, often tinged with red, decumbent at the base, cylindrical, smooth, leafy. *Leaves* on long leaf-stalks, of three, five, and seven *leafits*, oblong, serrated, hoary underneath, sometimes, though rarely, thicker and villose. The *calyx*, *petals*, *stamens*, *styles*, and *receptacles* of a dark red purple, approaching to blackness. *Flowers* few, panicled, an inch over. *Petals* considerably smaller than the spreading *calyx*. E.)

Marsh Cinquefoil. Purple Marshlocks. (Welsh: *Llygad ysgyfarnog*. E.) Muddy stagnant marshes. Giggleswick Tarn, near Settle. Curtis. Marl-pits near Dalton. Mr. Atkinson. Norfolk, not unfrequent. Mr. Woodward. Boggy places near Bromsgrove Lickey, Worcestershire. Nash. Bogs in the county of Durham, frequent. Mr. Robson. (Bootle Marsh, near Liverpool. Dr. Bostock. Coleshill Bog, Warwickshire. Purton. In the bogs of Bin's pond, Selborne. White's Nat. Hist. In Anglesey. Welsh Bot. Frequent in Scotland; Duddingston loch, Pentland hills, &c. Dr. Greville. South-west side of Edgbaston pool, near Birmingham. E.) P. June—July.†

Var. 2. Differs only in the leaves being hairy, which hairiness also it loses in the following year. Linn.

Pluk. 212. 2—*Pet.* 41. 2.

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* (From κομαρος, an ancient name given by Theophrastus to an evergreen tree, and not now rightly understood. E.)

† The root dyes a dirty red. The Irish rub their milking pails with it, to make the milk appear richer and thicker. Goats eat it. Cows and sheep are not fond of it. Horses and swine refuse it.

CLASS XIII.

POLYANDRIA.

MONOGYNIA.

(1) *Petals four.*

PAPA'VER. *Calyx* two-leaved: *Capsule* one-celled: (opening by pores under the crown of the *stigma.* E.)

CHELIDO'NIUM. *Calyx* two-leaved: *S. vess.* a long single-celled *Pod: Seeds* crested, free.

(GLAU'CIUM. *Calyx* two-leaved: *Pod* two-celled;* *Seeds* pitted, imbedded in a spongy substance, which fills the pod. E.)

ACTÆ'A. *Calyx* four-leaved: *Berry* one-celled: *Seeds* in a double row.

(2) *Petals five.*

CIS'TUS. *Caps.* nearly globular, opening at the apex: *Cal* five-leaved: two leafits smaller.

TIL'IA. *Caps.* five-celled, coriaceous: *Cal.* deciduous: (cells two-seeded, rarely one-celled, and one-seeded. E.)

[Delphinium Consolida.]

(3) *Petals numerous.*

NYMPHÆ'A. (*Berry* coated, of many cells: *Cal.* larger than the petals: *Pet.* seated on the germen: *Nect.* in the centre of the stigma. Sm. E.)

(NU'PHAR. *Berry* coated, of many cells: *Pet.* from the receptacle, furrowed and honey-bearing at the back. Sm. E.)

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* (Gærtner, Smith, &c., describe the cells as at least two: Hooker denies this pod having more than one, as was suspected by Jussieu. E.)

DIGYNIA.

(PŒO'NIA. *Cal.* of five leaves: *Petals* five: *Styles* none: *Capsule* many-seeded. E.)

POTE'RIUM. *Flowers* B. and F. on the same plant: *Cal.* four-leaved: *Bloss.* with four divisions.
F. *Berry* formed of the indurated tube of the blossom, two-celled.

TRIGYNIA.

DELPHIN'IUM. *Cal.* none: *Bloss.* five petals; upper petal spurred: *Nectary* cloven, sessile.

[Chelidonium hybridum. Reseda Luteola.]

TETRAGYNIA.

[Myriophyllum verticillatum.]

PENTAGYNIA.

(ACONI'TUM. *Cal.* none. *Pet.* five, the upper one hooded: *Nect.* two, recurved, stalked, under the hood. E.)

AQUILE'GIA. *Cal.* none: *Bloss.* five petals: *Nectaries* five: spurred below.

[Papaver Cambricum.]

HEXAGYNIA.

STRATIO'TES. *Cal.* with three divisions: *Bloss.* three petals: *Berry* six-celled, sheathed.

[Papaver Cambricum.]

POLYGYNIA.

ZOSTE′RA. *Spike-stalk* strap-shaped, bearing fruit on one side: *Cal.* none: *Bloss.* none: *Stam.* alternate: *Seed* solitary, alternate.

CLEM′ATIS. *Cal.* none: *Bloss.* four petals: *Seeds* many, with feathery tails.

THALIC′TRUM. *Cal.* none: *Bloss.* four or five petals: *Seeds* many, awnless, naked.

A′RUM. (*Sheath* one leaf, convolute at the base: *Sheath-fruit-stalk,* naked above; bearing *pistils* below, and sessile *stamens* in the middle: *Bloss.* none: *Berry* one-celled, one-seeded. E.)

HELLEB′ORUS. *Cal.* none: *Bloss.* five petals, permanent: *Nectaries* numerous, tubular: (*Follicles* three or four, beaked. E.)

CAL′THA. *Cal.* none: *Bloss.* five or more petals: *Caps.* (*Follicles* five to ten: E.) *Nectaries* none.

ANEMO′NE. *Cal.* none: *Bloss.* five to fifteen petals: *Seeds* many.

TROL′LIUS. *Cal.* none: *Bloss.* fourteen petals: *Nectaries* strap-shaped: *Caps.* many-seeded.

SAGITTA′RIA. *Flowers* B. and F. on the same plant: *Cal.* three leaves: *Bloss.* three petals.
B. *Filaments* about twenty-four.
F. *Seeds* many, naked.

RANUN′CULUS. *Cal.* five (or three) leaves: *Bloss.* five (or eight) petals: *Seeds* many: *Petals* with a nectary in the claw.

ADO′NIS. *Cal.* five leaves: *Bloss.* five or ten petals: *Seeds* numerous, angular, naked.

[Nymphæa alba. Papaver somniferum.]

MONOGYNIA.

ACTÆ′A. *Bloss.* four petals: *Cal.* four leaves: *Berry* one-celled: *Seeds* flattened, in two vertical rows. E.)

A. SPICA′TA. Bunch egg-shaped: fruit berry-like.

(*E. Bot.* 918. E.)—*Blackw.* 565—*Fl. Dan.* 498—*Clus.* ii. 86. 2—*Dod.* 402. 1—*Lob. Obs.* 389. 1, *and Ic.* i. 682. 1—*Ger. Em.* 979—*Park.* 379. 1—*Ger.* 829—*H. Ox.* i. 2. 8—*J. B.* iii. 660. 1.

(The four concave leaves of the *calyx* fall off very soon after they expand. E. Bot. Plant a foot and a half high, smooth; *stem* triangular; *leaves* growing triply ternate, sharp-pointed, deeply serrated. *Leafits* one to two inches long. *Stamens* thread-shaped, as long as the petals. *Summit* a knob, sessile. *Blossoms* several, whitish, forming a spike-like cluster. *Berries* black, juicy. E.)

HERB CHRISTOPHER. BANE-BERRY. Woods and shady places. Near Malham Cove, and in a wood near Clapham, Yorkshire. Curtis. (Mountainous pastures above Troutbeck, near Ambleside; and on Ingleborough. Mr. Woodward. And in the fissures of the curious natural pavement of limestone at the foot of it. Dr. Stokes. About Thorp Arch, and in Wensley Dale, near Askrig, Yorkshire. Mr. Wood. In a thick wood two miles from Thorndon, Essex. Blackstone. Sandwicke, Ullswater. Hutchinson. Cliesh Woods. Mr. Arnott. Hook. Scot. E.) P. May—June.[*]

CHELIDO'NIUM.[†] *Bloss.* four petals: *Cal.* two leaves: *Poc* strap-shaped, (one-celled: *Seeds* crested, free. E.)

C. MA'JUS.

Ludw. 132—*Kniph.* 8—*Fl. Dan.* 542—(*E. Bot.* 1581. E.)—*Woodv.* 263—*Blackw.* 91—*Mill.* 92. 1—*Walc.*—*Fuchs.* 865—*J. B.* iii. 482—*Trag.* 107—*Ger.* 911—*Clus.* ii. 203. 1—*Dod.* 48—*Lob. Obs.* 440. 1, *and Ic.* i. 760. 9—*Ger. Em.* 1069. 1—*Park.* 617. 1—*Lonic.* i. 165. 3—*Matth.* 628—*H Ox.* iii. 2. *row* 1. 9.

(*Stem* two feet high, branched, brittle, swollen at the joints, yielding a orange juice. *Calyx* somewhat hairy, deciduous. *Seeds* black, shining with a white crest. E.) *Leaves* deeply wing-cleft, segments nearly circular, scolloped. *Flowers* yellow. *Fruit-stalks* forming umbels. *Stamens* sometimes not more than twenty. *Seed-vessel* cylindrical, but compressed.

CELANDINE. (SWALLOW-WORT. Welsh: *Dilwydd felen*; *Llym y llygaid.* E.) Hedges, rough shady places, on rubbish and uncultivated ground. P. May—July.[‡]

Var. 2. *Laciniatum.* Jagged-leaved.

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[*] This plant is a powerful repellent. The root is useful in some nervous cases, but i must be administered with caution. The berries are poisonous in a very high degree. I is said that toads, allured by the fetid smell of this plant, resort to it; but it grows in suc damp and shady situations as those reptiles otherwise prefer. Sheep and goats eat it; cows horses, and swine refuse it.

[†] (From χελιδων, a swallow; because, according to Pliny and Dioscorides, it appear and disappears with that bird: but not so, Gerard observes, "for it may be founde all the yeere, but bicause some holde opinion, that with this herbe the dams (swallows) restore sight to their yoong ones when their eies be out, the which things are vaine and false. Vid. also Cornelius Celsus and Aristotle. Hence, however, it obtained the name of *Swallow-wort.* E.)

[‡] The juice of every part of this plant is yellow and very acrimonious. (It is, in fact, very dissimilar to the sap, properly so called, of plants in general; but being like animal milk, composed of a watery fluid with oil or resin, must be considered an emulsion, which by evaporation, deposits its gum-resin.' E.) It removes tetters and ringworms. Diluted with milk it consumes white opake spots upon the eyes. It destroys warts and cures the psora. There is no doubt that a medicine of such activity may be converted to more

Kniph. 8, *first fig.*—*Fl. Dan.* 676—*Mill.* 92. 2—*J. B.* iii. 483—*Clus.* ii. 203 —*Ger. Em.* 1069. 2—*Park.* 617. 2.

Leaves with five lobes. *Lobes* narrow, sharply jagged. Miller, who, during the cultivation of it for upwards of thirty years, could never perceive any alteration in it.

Among the ruins of the Duke of Leeds's seat at Wimbledon.

(GLAU'CIUM.[*] *Calyx* two-leaved: *Pod* two or three-celled: *Seeds* dotted, imbedded in a spongy substance which fills the pod. E.)

(G. LUTE'UM. Stem smooth: stem-leaves wavy: pod roughish, with minute tubercles. Sm. E.)

(*Hook. Fl. Lond.* 56. E.)—*Fl. Dan.* 585—*E. Bot.* 8—*Fuchs.* 520—*J. B.* iii. 398—*Kniph.* 4—*Trag.* 123—*Clus.* ii. 91. 1—*Dod.* 448—*Lob. Obs.* 141. 1, *and Ic.* i. 270. 2—*Ger. Em.* 367. 1—*Ger.* 294. 1—*Pet.* 52. 7—*Matth.* 1061 —*Lonic.* i. 82—*H. Ox.* iii. 14. 1. *f.* 1—*Park.* 262. 1 *and* 2.

Plant sea-green. *Stem* much branched, (spreading two or three feet long. *Radical-leaves* a span long, stalked, pinnatifid, lobed, cut, scabrous on the upper side. E.) *Stem-leaves* embracing the stem, deeply indented, rough above, smooth beneath. *Branches* forked. *Fruit-stalks* thick, slightly hairy, with one or two flowers. *Calyx* large, oval, hairy. *Petals* large, egg-shaped, yellow. *Pods* very long, (often ten or twelve inches, E.) bent in various directions, terminated by an arrow-shaped summit. Woodw.

YELLOW HORNED POPPY. (Irish: *Gran Areain.* Welsh: *Llwydlas; Pabi corniogmelyn. G. luteum.* Gærtn. Willd. Sm. Hook. Grev. *Chelidonium Glaucium.* Linn. Lightf. Huds. With. early Editions. E.) Sandy sea-shores. Norfolk and Suffolk coast, particularly about Dunwich; and Cartmel sands and Roosebeck, Lancashire. Mr. Woodward. (Ventner, Isle of Wight; Hastings; near Beachey Head. Dr. Bostock. North Shore, Liverpool, near the mouth of the river Alt. Mr. Shepherd. Walney Isle. Mr. Atkinson. Sea coast, Teignmoth. Queen's Ferry, near Edinburgh. On the Ballast Hills of Tyne and Wear. Mr. Winch. Sea Beach, Anglesey. Welsh Bot. Very abundant on the Kentish shores, particularly about Dover, &c. E.) A. July—Aug.[†]

(G. PHŒNI'CIUM. Stem hairy: stem-leaves pinnatifid, cut: pod rough with upright bristles. Sm. E.)

Curt. Glaucium—(*E. Bot.* 1433. E.)—*Clus.* ii. 91. 2—*Dod.* 449. 1—*Lob. Obs.* 141. 2, *and Ic.* i. 271. 1—*Ger. Em.* 367. 2—*Ger.* 294. 2—*J. B.* iii. 399. 1.

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important purposes. (Salisbury assures us that it is an excellent remedy in icteric, and other obstructions of the viscera; and, if taken with perseverance, will greatly relieve the scurvy. It should be used fresh, as it loses part of its virtue in drying.—In Cochin-China the roots are esteemed for various medicinal purposes. A double-flowered variety is sometimes admitted into gardens. E.)

[*] (So called from its glaucous or sea-green colour. E.)

[†] (This is a very showy flower, and Miller observes, if a few of the seeds are scattered about on rock-work, the plants will rise without trouble, and have a pretty effect; though too apt to spread in gardens. E.)

(*Plant* sea-green (nearly the same size, but rather more upright than the preceding. E.) *Root* spindle-shaped. *Root-leaves* in a circle, on short leaf-stalks; wings alternate, indented at the ends, the upper ones largest, the terminal ones broad, blunt, with three or four indendures, hairy. *Stem* slighly hairy, furrowed, forked, branched. *Stem-leaves* half embracing the stem, alternate. *Fruit-stalks* terminal, and from the bosom of the upper leaves, slightly hairy, with sometimes one or two leaves similar to those of the stem, but smaller. *Petals* oval, deep orange, with an elliptical purplish spot at the base of each. *Capsule* very long, nearly straight, terminated by a blunt knob, very hairy. Woodw.

(RED HORNED POPPY. *G. phœnicium*. Gærtn. Willd. Sm. *Chelidonium corniculatum*. Linn. Huds. With. early Editions. Hull. A very doubtful native. E.) Sandy corn-fields, Norfolk, discovered by Mr. Stillingfleet; (but Sir J. E. Smith observes it has never been found since. E.) A. July—Aug.

(G. VIOLA'CEUM. Leaves doubly pinnatifid, linear, smooth: stem smooth: pod of three valves and three cells, with membranous partitions. Sm. E.)

E. Bot. 201—*Kniph.* 10—*Clus.* ii. 92. 2—*Dod.* 449. 2—*Lob. Obs.* 141. 3, *and Ic.* 272. 1—*Ger. Em.* 367. 4—*Park.* 262. 3—*J. B.* iii. 399. 2—*Pet.* 52. 8 —*H. Ox.* iii. 14. 2. *f.* 2.

(*Stem* branched, about a foot high. E.) *Root* spindle-shaped, slender. *Root-leaves* on leaf-stalks. *Stem-leaves* sessile, simply or doubly winged; divisions strap-shaped, nearly equal, smooth. *Stem* slightly hairy. *Fruit-stalks* smooth. *Calyx* oval, slightly hairy. *Petals* egg-shaped, deep purple, (fugacious. E) *Pods* long, smooth, terminated with a roundish knob. Woodw. (Linnæus suspected this plant might be a hybrid between a *Chelidonium* and *Papaver Argemone*. E.)

(VIOLET HORNED POPPY. *G. violaceum*. Juss. Willd. Relh. Sm. *Chelidonium hybridum*. Linn. With. early Editions. *C. violaceum*. Lamarck. E.) Sandy corn-fields. Between Swaffham and Burwell, Cambridgeshire. Ray. Relhan. (About four miles from Aylesham, towards Cromer, Norfolk. Mr. Hugh Rose. E.) A. May—June.

PAPA'VER.* *Bloss.* four petals: *Cal.* two-leaves: *Summit* target-shaped, radiated, scolloped: *Caps.* (often) many-celled: opening with pores beneath the crown of the permanent summit.

(1) *Capsules rough with hairs.*

P. HY'BRIDUM. Capsule nearly globular, furrowed, bristly: stem leafy, many-flowered: (leaves doubly pinnatifid. E.)

E. Bot. 43—*Lob. Obs.* 144. 1. *and Ic.* i. 276. 1—*Ger. Em.* 373. 1—*Park.* 369. 1—*J. B.* iii. 396. 1—*Pet.* 52. 5—*H. Ox.* iii. 14. 9—*Ger.* 300. 1.

Leaves doubly wing-cleft: *segments* strap-shaped, nearly equal, the terminal one three-cleft; nearly smooth above, nerves underneath, bristly.

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* (Learned etymologists derive this name from *pap, papa*, given to infants in order to procure sleep; or we might suggest, (ris. ten.?) *pap. ver.* q. d. the true parent, or chief nourisher,

"Tired nature's sweet restorer, balmy sleep." E.)

Branches and *fruit-stalks* channelled, with strong hairs pointing upwards. *Capsules* roundish-oval, furrowed like a melon. *Stigma* with radii answering to the furrows. Woodw. *Petals* small, dark scarlet. *Filaments* deep purple. *Anthers* pleasant blue. Relh. (*Stem* slender, branched, leafy, twelve to eighteen inches high, rough, with hairs laid flat. *Branches* single flowered, naked. *Calyx* armed with brown bristles. E.)

ROUND-ROUGH-HEADED POPPY. Corn-fields. Near Norwich. Mr. Pitchford. At Wells, Norfolk. Mr. Crowe. About Durham. Mr. Robson. (At Darent, near Dartford. Mr. Lewin. Near Fulwell and Sunderland. Mr. Winch. Malton corn-fields, Yorkshire. Teesdale. Around Ramsgate. Mr. Gerard E. Smith. E.) A. June—July.

P. ARGEMO'NE. Capsule club-shaped, ribbed, bristly: stem leafy, many-flowered: (leaves doubly pinnatifid. E.)

(*E. Bot.* 643. E.)—*Fl. Dan.* 867—*Curt.* 313—*J. B.* iii. 396. 2—*Lob. Obs.* 144. 2, *and Ic.* i. 276. 2—*Ger. Em.* 373. 2—*H. Ox.* iii. 14. 10—*Pet.* 52. 6 —*Ger.* 300. 2.

Root-leaves with a broad mid-rib, set with three or four pair of wings and an odd one, each of which is cloved into three. *Petals* inversely egg-shaped, dull scarlet, with a black spot towards the base, white before the calyx opens. *Germen* inversely conical. *Summit,* rays five to eight. *Capsule* cells as many as rays on the summit; bristles strong, white, pointing upwards. (In general habit resembling *P. hybridum*, but the segments of the leaves broader. It sometimes appears with a double flower. Curtis remarks that it is often overlooked from the extreme fugacity of its petals, which rarely continue expanded six hours. E.)

(Starved maritime specimens may occasionally be observed extremely diminutive, bearing only one flower, and usually more hirsute; as at Roosebeck. Mr. Atkinson. Between Abergele and Conway. Mr. Griffith. By the sea side at Weymouth. E.) From such originated *P. maritimum.* With. E.)

LONG-ROUGH-HEADED POPPY. (Welsh: *Drewg Hirben-gwrychog.* E.) Corn-fields. A. June—July.

(P. NUDICAU'LE. Capsule obovate, hispid: scape with one flower naked, hispid: leaves villoso-hispid, pinnatifid, attenuated into a petiole longer than the leaf.

Hook. Fl. Lond. 214—*Fl. Dan.* 41—*Sims, Bot. Mag.* 1633—*Kniph.* 10.

Stem none, or obsolete. *Leaves* all radical, numerous, petiolated, entirely villoso-hispid, pinnatifid, with the laciniæ entire or cut, petiole longer than the leaf. *Scape* four to six inches high, simple, rounded, hairy, the hairs horizontal, rusty brown, bearing a single flower at the extremity. *Calyx* of two leaves, the leafits oval, concave, externally clothed with brown, patent, hairs. *Bloss.* of four yellow, roundish, patent, petals. *Stamens* numerous, yellow, longer than the pistil. *Anthers* subtetragonous. *Germen* oval, hispid. *Stigma* sessile.

NAKED-STALKED YELLOW POPPY. Gathered by Prof. Giesecke of Dublin among rocky glens in the hills at Achilhead, Ireland.

Hook. Fl. Lond. E.)

(2) *Capsules smooth.*

P. RHÆ'AS. Capsules smooth, nearly globular: stigma many-rayed:

stem many-flowered, rough, like the flower-stalks, with expanding bristles: leaves pinnatifid, cut.

Curt. 215—(*E. Bot.* 645.—*Fl. Dan.* 1580. E.)—*Blackw.* 60—*Ludw.* 17—*Kniph.* 5, *the 2d. fig.*—*Woodv.* 186—*Fuchs.* 516—*Trag.* 120—*Ger.* 299. 1—*Lonic.* i. 81—*H. Ox.* iii. 14. 6—*Dod.* 447—*Lob. Obs.* 143, *and Ic.* i. 275—*Ger. Em.* 371. 1—*Park.* 366. 4—*Pet.* 52. 2—*Matth.* 1057—*Blackw.* 2.

Leaves hairy: *leafits* strap-shaped, indented, serrated. *Fruit-stalks* long; hairs expanding. Lyons. *Capsule* not globular but ovate, and nearly as broad as it is long. *Blossom* bright scarlet, sometimes black at the base. (Distinguished from *P. dubium* by hairs and short capsules spreading horizontally; otherwise much resembling that species, though the segments of the leaves are generally broader. E.)

Corn Poppy. Corn Rose. Cop Rose. (Scotch: Head-wark. Red-mailkes. Irish: *Blah na bo dah.* Welsh: *Llygad y cythraul.* E.) Among corn, (frequent in most parts of this island, but in the southern counties the corn-lands are most brilliancy bordered with these Poppies, particularly in Kent and Sussex. The Rev. S. Dickenson observes that it is rarely, if ever, to be met with in Shropshire, nor have I been able to find a single plant of it in Staffordshire; the common Corn Poppy of those counties being *P. dubium.* E.) A. June—Aug.*

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* (Garden culture produces ornamental varieties; more or less double. One of the most beautiful is the *Carnation Poppy*, rich in varied tints, of delicate texture, and elegant form. This flower, observes Phillips, bursts forth from its confinement, when mature, with considerable force, throwing off the two-leaved caducous calyx to some distance, and astonishing the beholder to see so large and beautiful a blossom expand from so small a dwelling. This Poppy bespeaks a light and shallow soil. It seems to have been from the most remote ages considered an attribute of Ceres, and an indispensable requisite in the decoration of that goddess, as it is found almost invariably to accompany the more valued grain, both in Britain and on the Continent. When in corn-fields so predominant as to appear as the principal crop, (the quantum of nutriment in a given surface being necessarily limited), this weed must considerably detract from what ought to supply the more valuable produce; it should therefore obtain the early attention of the farmer, and not be suffered to exert a prejudicial influence without interference, as is too often the case, even in some well-cultivated districts. And hence, (among weeds to be eradicated), Virgil condemns

"*Poppies*, pregnant with Lethean juice." E.)

The petals give out a fine colour when infused, and a syrup thus prepared is kept in the shops. It partakes in a small degree of the properties of opium. (From the petals of this plant the ingenious little *Apis Papaveris*, (Drapery-bee,) choses the hanging of her apartment. This curious insect dextrously cuts out the petals of the half-expanded flowers, straightens the folds, and fits them for her purpose, overhanging the walls of her solitary cell with this splendid tapestry, in which, when completely finished, and rendered soft and warm, she deposits her honey and pollen. An interesting writer remarks,—"The Entomologist boasts that there is nothing analogous in the vegetable world to the metamorphosis of the butterfly: and, in poetic fervour, he resembles it to the immerging of the immortal spirit from its tabernacle of earthly clay. But behold the brilliant Poppy, just ready to expand. The corolla is carefully folded up, and enclosed in a rough unvaried covering of green. Certainly in this state it is not particularly attractive. Wait however one moment; the sun, even at this early hour, has absorbed the dews of night, and dried and warmed the mask of rough green which envelops the head. Suddenly it opens, and falls off. As the butterfly bursts from its dull dry case in all the pride of perfection, so does this brilliant flower instantly display its rich brown stamens, and unfold its splendid orange wings, as Linnæus elegantly terms the petals. In both the insect and the flower, nature seems to have deviated from her usual slow gradations, as if impatient for, and

P. DU'BIUM. Capsules oblong, smooth, angular: stem many-flowered, hairy: fruit-stalks with bristles adpressed: leaves doubly pinnatifid.

(*E. Bot.* 644. E.)—*Curt.* 297—*Walc.*—*H. Ox.* iii. 14. 11—*Pet.* 52. 3.

Stem (two feet high, E.) woolly below, more and more bristly upwards, the bristles on the fruit-stalks laid close. *Leaves*, segments entire, edges and mid-ribs hairy. *Capsules* conical, much longer than broad; rays of the summit from six to ten. (As the capsules ripen the lower part curiously shrinks from the lid sufficiently to admit the genial influence of the warm air, and the escape of the mature seeds, without endangering them by exposure to wet. E.) *Petals* dilute scarlet. A strict attention to the proportionate length and breadth of the capsule, and to the hairs on the fruit-stalk being laid close or expanding, will readily distinguish this species from *P. rhœas*. (*Flowers* always known from our other red Poppies by their paleness. Sm. E.)

LONG SMOOTH-HEADED POPPY. (Welsh: *Drewg Hirben-llyfn.* E.) Corn-fields, chiefly in light sandy land. A. June—July.

(About Shanklin Chine, and other parts of the Isle of Wight, is found an extremely hirsute var. as represented in Fl. Dan. 902: the calyx studded with large transparent globules, with a bristle springing out of each. The capsule is nearly twice as long as it is broad, longer than in *P. rhœas*, shorter than in *P. dubium.*

P. SOMNIF'ERUM. Capsule smooth, nearly globular, as are the calyx and stem: leaves embracing the stem, jagged, glaucous.

(*E. Bot.* 2145. E.)—*Blackw.* 482. β 482—*Woodv.* 185—*Dod.* 445. 2—*Lob. Obs.* 142. 1, *and Ic.* 272. 2—*Ger. Em.* 369. 1—*Park.* 366. 2—*Fuchs.* 518—*Dod.* 445. 1—*Lob. Obs.* 464. 1, *and Ic.* i. 274. 1—*Ger. Em.* 369. 2 β—*Park.* 365. 1—*J. B.* 390—*Matth.* 1058—*Ger.* 296. 1—*Ger.* 296. 2 β—*Trag.* 122—*Lob. Obs.* 464. 1, *and Ic.* i. 274. 2—*Ger. Em.* 370.

Petals white, tinged with purple, with large deep purple blotches at the base. Ray. (*Flowers* very large. The whole *plant* glaucous. *Stem* three feet high, smooth in the lower part, rough upwards with expanding hairs. E.)

WHITE POPPY. (OPIUM POPPY. E.) Uncultivated neglected gardens. Ray. Corn-fields. Hudson. Water beach, and banks of the closes which separate Denny Farm from the Ely road. Relhan. (Certainly wild on the banks of all the fen ditches, where the soil is sandy, in the parish of Hockwold cum Wilton, Norfolk. Rev. Mr. White, in Fl. Brit. Near the observatory, Oxford; and by Godstow Nunnery. Sibthorp. Willington Ballast Hills, Durham; and about Rochester. Mr. Winch. About Delavine House, near Coupar, Angus-shire. Miss Watson, in E.

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glorying in, their charms." "And how much is there in this flower corresponding with the nature of man. The root, like the infancy of the human plant, contains the whole of the future being; but who can look at either, and form an estimate of their physical and moral beauty. The gradual unfolding of the leaves resembles the progressive stages of education; till at length the human plant stands forth in all the strength of his faculties, an intellectual and moral agent. But, unlike the brilliant Poppy, he is not the flower of a day. The seeds of piety to God, and benevolence to man, are ripened in his bosom, destined to germinate and blossom in a richer soil, the garden of immortality." Wonders of the Veg. Kingdom, p. 72. E.)

Bot. (Moat of Tutbury Castle, Staffordshire, with flowers much smaller than the cultivated sort. Mr. W. Christy. E.) A. June—July.*

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* Opium is the milky juice of this plant, inspissated by the heat of the sun. The Edinburgh College directs an extract to be prepared from the heads, i. e. the capsules. This extract is supposed to be milder in its effects than the foreign Opium, agreeing with many constitutions by which that cannot be borne, but it requires double the quantity for a dose: (nevertheless, it is asserted that those who walk through fields of Poppies, or in any manner prepare those flowers for making Opium, are very sensibly affected with the drowsiness they occasion. A syrup, made with a decoction of the heads, is kept in the shops, under the name of Diacodion. The seeds are sometimes used to make emulsions, but they have nothing of the narcotic virtues of the other parts of the plant. The Persians and Germans are said still to sprinkle these seeds over their rice and wheaten cakes, a practice of great antiquity. They are also sometimes sent to table mixed with honey. Gerard reports that "the seedes are often used in comfits, or served at the table with other junketting dishes: the oile which is pressed out is pleasant and delightfull to be eaten." M. Robiquet, has discovered that the narcotic quality of the Poppy is owing to a crystallizable substance called morphium, which possesses some properties in common with ammonia. It seems to be a solid and combustible alkali: its action on the animal economy is violent, even in the smallest quantity. This plant is cultivated in Flanders, also in England, largely about Evesham, and Kettering, for the above named purposes; and for the sake of the seeds, from which an oil is extracted little inferior to olive oil, and often substituted for Florentine. The seeds consist of a simple farinaceous matter united with a bland oil used by painters. They have been given in the form of emulsion in catarrhs. But a principal purpose for which *Maw*-seeds are raised in large quantities is as food for birds, and hence the vulgar name.

As observed in the "Wonders of the Vegetable Kingdom," when the petals of the Poppy fall off, the seed-vessel which rises in the centre, is completely closed. In process of time, as the seeds begin to ripen, the cover is gradually elevated, till as length it exhibits a beautiful little dome, supported by a circular range of pillars, which form so many openings for the escape of the imprisoned seeds, which not unfrequently amount to many thousands in a single capsule. Another singularity is thus noticed by Paley. "The head while growing hangs down, a rigid curvature in the upper part of the stem giving it that position, and in that position it is impenetrable to rain or moisture. When the head has acquired its size, and is ready to open, the stalk erects itself, for the purpose, as it should seem, of presenting the flower, and the instruments of fructification, to the genial influence of the sun's rays, a curious instance of the attention of nature to the safety and maturation of the parts upon which the seed depends." The silken tissue of the petals proves a talisman for Cupid, for, according to the practice of youthful lovers,—

> "By a prophetic *Poppy-leaf* I found
> Your chang'd affection; for it gave no sound,
> Though in my hand struck hollow as it lay,
> But quickly wither'd like your love away."

Many fine varieties of these flowers are produced by garden culture. The Society of Arts rewarded Mr. Ball, of Williton, Somerset, for preparing Opium from Poppies of British growth. The most productive flowers are large, rather dark, but varying in colour, and somewhat double. The seeds should be sown in February, and again in March, in soil well manured and worked fine, either in drills or broad-cast, to be thinned when a few inches high, and kept free from weeds. When the leaves fade, longitudinal incisions must be made in the green pods; the glutinous fluid will adhere to the plant, and in a day or two be inspissated by the sun, and ready for scraping off with a knife. It may shortly after be potted. This production has been declared by competent judges to be equally powerful with, and vastly more pure than, the best foreign Opium. The profit from an acre of suitable land, with a southern aspect, and where labour is cheap, must be very considerable. The above account is corroborated by the experiments of Dr. Fox, at Brislington, near Bristol, excepting as to the proportionate strength of the article. Messrs. Cowley and Staines, of Winslow, Bucks, 1824, received a reward of thirty guineas for cultivating twelve acres of Poppies, and

P. CAM'BRICUM. Capsule smooth, oblong, beaked: stem many-flowered, nearly smooth: leaves winged, jagged, stalked.

obtaining therefrom 196 lbs. of Opium, which sold for two shillings per pound more than any of foreign growth. The cultivation of the Poppy has been strongly recommended as an employment for the poor. A practical treatise, describing the whole process, with the instruments for cutting and collecting, may be had at Northampton, or of Mr. Dash, Kettering. The general supply has always been obtained by importation from Persia, Egypt, Smyrna, and the East Indies; but were this provided at home, light labour, suitable even to women and children, would be very considerable, and large sums of money kept in the country. Opium, properly so called, is the hardened juice of Poppy heads; Meconium is the juice of heads and leaves mixed, and not so powerful. The remarks here offered apply not only to foreign Opium, but, more or less, to our native produce. Though in ordinary cases a single grain of Opium may sometimes prove too large a dose, the quantity to which the human constitution may be gradually habituated, is astonishing. In countries where the prevailing religion prohibits the use of wine, as in Turkey, the Barbary States, Egypt, and throughout a large part of Hindoostan, solid Opium, by progressive habit, is sometimes taken to the amount of half an ounce or more each day, without producing any other effect than a temporary inebriety. Garcias relates that he knew an individual who daily swallowed ten drams! Though this drug is wont to transport the enervated Asiatic to extatic bliss, the Eastern despot occasionally applies it to the prompt extinction of life in state criminals. The heat of such climates is supposed to concentrate its deadly particles: as an antidote to which modern chemists have ascertained acids to be most effectual. But the habitual practice of Opium taking, even under the most plausible pretexts, cannot be too strongly deprecated, as not less immoral and pernicious than any other species of debauchery; not merely enervating the system, but depriving the unhappy transgressor of a remedy most efficacious on proper occasions. However great the temptation to fly to so wretched a subterfuge, the man of courage and principle will shun

"*Poppies* which suborn the sleep of death."

Dr. Drummond, in his admirable "First Steps to Botany," very justly remarks, that Opium "allays pain, and lightens sorrow, diffuses a pleasing langour over the frame, and gives unusual serenity to the mind, dispelling from it every apprehension of sublunary evil, and steeping it in scenes of Elysium. It is indeed an agent which can, for a period at least,

> "Raze out the written troubles of the brain,
> And, with a sweet oblivious antidote,
> Cleanse the full bosom of that perilous stuff,
> Which weighs upon the heart."

But this is only for a time, and the charm being dissolved, the soul awakes from its trance only to experience aggravated woe, in those at least, (and even in Britain the number is not small), who have fallen into the habitual use of this drug. If there be on earth a misery that approaches what we might be allowed to conceive as among the worst sufferings of a future place of punishment, it is the state of an Opium-eater, after the action of his dose has subsided. Unhappy and trembling, his head confused, and his stomach sick, remorse at his heart, but his resolution too feeble to attempt a reformation; feeling as an outcast from every thing that is good or great, he returns despairing to a repetition of his dose, and every repetition adds confirmation to the evil habit. His constitution becomes exhausted in a few years; he grows prematurely old, and dies of palsy, dropsy, or some disease as fatal: he dies, having by his own weakness and imprudence lived a life of wretchedness in this world, and looking forward at his exit to the darkest scenes of misery in the next. How often does man turn the greatest blessings into the greatest curse!" Should this accurate description prove insufficient to deter the tempted from yielding to a fascination more fatal than that of the serpent, let him read, with trembling, "the Confessions of an English Opium Eater."

After the above warning, we may venture to listen to the concluding lines, even of a rapturous encomium of the Poppy:

Dill. Elth. 223. 290—*E. Bot.* 66—*Park.* 369. 4—*H. Ox.* iii. 14. 12—*Pet.* 52. 4.

(*Plant* twelve to eighteen inches high; *leaves* glaucous beneath. E.) *Leaves* winged, nearly smooth; *root-leaves* on very long hairy leaf-stalks; wings two or three pair, oval-spear-shaped, deeply cut, almost

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"Heedless I past thee in life's morning hour,
Thou comforter of woe!
Till sorrow taught me to confess thy power.

* * * *

* * * *

Hail sacred blossom! thou canst ease
The wretched victims of disease;
Canst close those weary eyes in gentle sleep,
That never open but to weep;
For oh! thy potent charm
Can agonizing pain disarm,
Expel imperious memory from her seat,
And bid the throbbing heart forget to beat.

Soul-soothing plant! that can such blessings give,
By thee the mourner bears to live;
By thee the hopeless die!
Oh, ever friendly to despair!
Might sorrow's pallid votary dare,
Without a crime, (*a*) that remedy implore
Which bids the spirit from its bondage fly,
I'd court thy *palliative* aid no more;
No more I'd sue that thou shouldst spread
Thy spell around my aching head,
But would conjure thee to impart
Thy balsam for a broken heart;
And by thy soft Lethean power,
(Inestimable flower!)
Burst these terrestrial bonds,
And other regions try."

Despite, however, the most empassioned strains, breathing the deep tone of feeling too cruelly agitated, we cannot but reiterate, while, in sympathy for human frailty, we pity more than blame the infirmity of our common nature, lamentable indeed is it that man, the rational being, turning from the only true source of genuine consolation, should, as the beast that perisheth,

"From the low earth tear a polluting weed;" E.)

(*a*) (These fine lines were composed by the Hon. H. F—— ——, at a period when that amiable and accomplished female was indeed but "too severely tried," and it is hoped that ere the conclusion of her sufferings she derived some comfort from the friendship and professional skill of Dr. Withering. As connected with the subject immediately before us, it may perhaps be allowable here to introduce our Author's own sentiments, as communicated to another lady, who, also, in her sad extremity confidentially sought the solace of his advice. "To encourage a desire to die is an unworthy tendency to desert the post allotted to us; and if such desires once become motives to make us neglect the means of restoring or preserving health; such motives and such conduct, directly or indirectly tending to cut short our existence, are, perhaps, altogether as indefensible and as wicked, as the still shorter modes of the pistol or the halter." Memoirs and Tracts of Dr. Withering. p. 182. E.)

lobed, the terminal one with three lobes; *stem-leaves* on short fruit-stalks, the upper sessile. *Fruit-stalk* slightly hairy, with one flower. *Petals* egg-shaped, pale yellow, scored towards the base. Woodw. (*Juice* lemon-coloured. E.)

Yellow Poppy. Mountains of Wales, and about Kendal. By the Ferry-house on Winandermere, Westmoreland; and near Holker, Lancashire. Mr. Woodward. (Mossdale head in Wensley Dale, Yorkshire. Mr. Brunton. On the Brëiddin Hills, Montgomeryshire. Mr. Aikin. Craig Cwm Pistill, near Newton, ditto. Dr. Evans. About Pont Nedd Vachn, Aberdylais, &c. Glamorganshire, plentiful. Dillwyn. Bot. Guide. Near Pont Meredith, Denbighshire. Mr. Griffith. (At the waterfall of Lidford, on the borders of Dartmoor; and woods about Endsleigh and Dunterton. Rev. J. Pike Jones. Near Portingseale, Cumberland. Mr. Winch. Braid woods. Mr. Arnott. Grev. Edin. Benbulben, Sligo. E. Murphy, Esq. E.) P. June—Aug.*

NYMPHÆ'A.† (*Cal.* four or five-leaved, larger than the petals: *Pet.* numerous, inserted on the germen beneath the stamens: *Berry* many-celled, with a cortical coat: *Nectary* on the stigma. E.)

N. al'ba. Leaves heart-shaped, very entire, (even beneath: calyx four-leaved: stigma of sixteen ascending rays. E.)

Fl. Dan. 605—*Blackw.* 498. *a. and b. and* 499—*E. Bot.* 160—*Fuchs.* 535—*Trag.* 696—*J. B.* iii. 770—*Gmel.* iv. 71—*Matth.* 893—*Ger.* 672. 1—*Clus.* ii. 77. 1—*Dod.* 585. 1—*Lob. Obs.* 324. 1, *and Ic.* i. 595. 1—*Ger. Em.* 819. 1—*Park.* 1351. 1—*Pet.* 71. 1.

(*Leaves* a span wide, oval, with a deep notch at the base. *Leaf-stalks* and *flower-stalks* cylindrical, cellular. *Blossoms* several inches over; *pistils* and *stamens* yellow.

This most beautiful aquatic, the largest of its kind, floats its splendid white, or pinkish flowers, by broad leaves. E.)

White Water-lily. Water-rose. Water-can. Can-dock. (Irish: *Curririn ban.* Welsh: *Alaw; Magwyr wen.* Gaelic: *An duilleag-bhait; Rabhagach.* E.) In slow rivers and ponds. Marazion Marsh. Mr. Stackhouse. (More frequent in ponds about Liverpool than *N. lutea.* Dr. Bostock: as in Somersetshire. E.) Equally common in the rivers and lakes of Norfolk and Suffolk with *N. lutea.* Mr. Woodward. Mere, near Scarborough. Mr. Travis. Between Blandford and Durweston; common in the rivers Stour and Avon. Pulteney. (In Greenley lake, and Bromley lake, near Shewing Shields, Northumberland. Winch Guide. Both species frequent in Anglesey. Welsh Bot. Ragley, Warwickshire; Snowdon Pool, near Bridgnorth. Purton. Seen to the greatest perfection in the little bays and inlets of pellucid alpine lakes: in Loch Lomond acres are densely covered with it. Hooker. In all the northern English lakes. Mr. Winch. E.) River Sow, near Stafford. In the large pool at Patshull, Staffordshire. P. July.‡

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* (*Papaver Cambricum*, *Serratula alpina*, and *Rhodiola rosea*, were first identified as British plants by the celebrated apothecary and herbalist Thomas Johnson, in a botanical excursion to explore Snowdonia. Haplessly forsaking science for the sword, he shortly afterwards fell in the royal cause, ann. 1644. E.)

† (The Νυμφαια, of Theophrastus and Dioscorides, from being found in the haunts of the water Nymphs. E.)

‡ It extends itself by long runners terminating in a bulbous root, and sending up leaf-

(**NU'PHAR.** *Cal.* five or six-leaved: *Pet.* numerous, inserted with the stamens on the receptacle, furrowed and bearing honey at their backs: *Berry* many-celled, coated. E.)

N. LUTE'A. (Leaves heart-shaped, the lobes approximating: calyx five-leaved, much larger than the petals: border of the stigma entire: foot-stalks two-edged. E.)

(*Hook. Fl. Lond.* 141. E.)—*Fl. Dan.* 603—*Blackw.* 497. *a and b, and* 499. 1—*E. Bot.* 159—*Lonic.* i. 177. 2—*Kniph.* 3—*Fuchs.* 536—*Trag.* 697—*J. B.* iii. 771—*Matth.* 894—*Clus.* ii. 77. 2—*Dod.* 585. 2—*Lob. Obs.* 324. 2. *and Ic.* i. 594. 2—*Ger. Em.* 819. 2—*Park.* 1252. 5—*Pet.* 71. 3—*Ger.* 672. 2.

Leaves egg-shaped, with a deep notch at the base, (floating on the surface of water, very large and smooth. E.) *Calyx,* leaves yellow, except at the base on the outside, where they are green. *Petals* fleshy, golden yellow. *Stamens* after shedding their pollen reflexed. *Seed-vessel,* cells often more than fifteen, (egg-shaped, in a degree beaked, smooth. *Flowers* on long fruit-stalks, two inches in diameter, concave cylindrical. *Seed-vessel* bursting irregularly when ripe. E.)

stalks in deep water. It may be propagated by transplanting the bulbous roots in winter. Mr. Stackhouse. Botanists often affect to despise the labours of the Florist, who wishes, by multiplying the petals, to produce double flowers, stigmatizing them by the name of monsters. They may be monsters; but they are beautiful monsters. Who does not admire the flower of the double-blossomed cherry? And when, as in the White Water Lily, the petals are naturally multiplied to a great degree, he who turns away with disdain from this splendid object of creation, must be fastidious indeed. The petals gradually lessen as they approach the centre of the flower, where the outer filaments expanding in breadth, assume the form of petals, as is generally the case in the double flowers of gardens. (In Japan, either natural or artificial White Water Lilies, as the symbols of purity, are borne on poles before the corpse in funeral processions. The fervid imagination of the Eastern poet represents the eyes of his mistress as rivalling the sun itself in awakening the Water-lily; causing it, in error, to emerge from its watery couch. But, discarding metaphor, the economy of this plant is indeed particularly worthy of notice. Emulating the sacred Lotos of the Nile, the flowers arise and expand as the sun gains its ascendancy, close towards evening, and in that state either repose through the night reclining on the bosom of the water, or actually sunk beneath its surface, till revived by the return of day; when

> "The *Water-lily* to the light
> Her chalice rears of silver bright." Scott.
>
> "Those virgin *Lilies,* all the night
> Bathing their beauties in the lake,
> That they may rise more fresh and bright
> When their beloved sun's awake." Moore.

The action of the stimulus of light in this instance is peculiarly obvious, expanding, and thereby raising the flower, as Sir J. E. Smith interprets, "that the pollen may reach the stigma uninjured:—afterwards, by contraction, losing its buoyancy and sinking from its own weight, as the more ponderous fruit ultimately does to the muddy bottom, therein gradually decomposing into a gelatinous mass, and depositing its seeds. E.) The tuberous roots are used in Ireland, and in the island of Jura, to dye a dark brown; (they have been esteemed narcotic. E.) Swine eat it. Goats are not fond of it. Cows and horses refuse it. (Both the species support *Aphis aquatilis* and *Leptura aquatica.* This superb flower must constitute the chief decoration of ornamental ponds, or basins. Chinese carps, (*Cyprinus auratus*), are said to delight in the shade of its expansive foliage. Oxygen gas is copiously evolved in bubbles from the leaves. In Turkey and Greece an agreeable cordial beverage is prepared from the leaves and flowers. Sturm. The orientals consider the large roots of this tribe of plant as esculent: whether our species may be rendered innoxious by boiling might be worthy of experiment. E.)

Yellow Water Lily or Water-can. (Irish: *Cohinih Auhun.* Welsh: *Bwltis ; Lili melyn y dwr.* *N. lutea.* Sm. Prodr. Fl. Gr. Hook. Fl. Scot. *Nymphæa lutea.* Linn. &c. E.) Slow rivers, pools, and ditches. River Avon, at Pershore. Mr. Ballard. (In the river Alt, by Formby, near Liverpool. Mr. Shepherd. E.) Common in the rivers and lakes of Norfolk and Suffolk. Mr. Woodward. Mere, near Scarborough. Mr. Travis. (In the loughs, near Shewing Shields, Northumberland. Winch Guide. In a piece of water entering the lawn, at Brockhall, Northamptonshire. E.)
P. July—Aug.*

(Var. 2. *Lesser Yellow Water Lily.* *N. pumila.* Hoffm. Sm. Hook. Fl. Lond. t. 165. *N. minima.* E. Bot. 2292. *Nymphæa lutea β minima.* Willd. Differs from the commoner kind in being throughout only one half its size, the leaves scarcely attaining three inches in length and two in breadth ; the blossom not an inch over when fully expanded ; but especially in its deeply toothed, green bordered stigma, and compressed foot-stalks. This interesting plant has been communicated to us by the kindness of N. J. Winch, Esq. who remarks that it is precisely *N. lutea* in miniature, and that the specific marks of the stigma toothed, or entire, are fallacious, as depending on the age of the seed-vessel. Discovered in 1809 by Mr. W. Borrer in the lake near the farm of Corrie Chastel, at the foot of Ben-Cruachan ; also in Loch Baladren. Loch of Monteith, Sterlingshire, between the islands and the shore. Mr. Arnott. Loch Duble, near Inverary. Mr. Maughan. In a small lake at the back of the inn of Aviemore. Hooker. Chartners Lough, on the Wallington Moors, Northumberland; J. Trevelyan, Esq.; by whom transplanted to fish ponds, and there observed to flourish for fifteen years beside *N. lutea,* still retaining its diminutive size; though some writers have asserted a contrary tendency. E.)

TIL'IA.† *Bloss.* five petals : *Cal.* with five divisions, deciduous : *Capsule* nearly globular, five-celled, five-valved, coriaceous, opening at the base.

T. Europæ'a. Flowers without a nectary: (leaves cordato-acuminate, serrate: pericarp roundish, more or less angular and ligneous. E.)

(*Hook. Fl. Lond.* 190—*E. Bot.* 610. E.)—*Ludw.* 48—*Kniph.* 10—*Sheldr.* 50—*Hunt. Evel. at p.* 201. i. *p.* 194. *Ed.* 2*d*—*Fl. Dan.* 553—*Blackw.* 469—*Matth.* 174—*Ger.* 1298. 1—*Dod.* 838—*Lob. Obs.* 606. 1, *and Ic.* ii. 188. 1 —*Ger. Em.* 1483. 1—*Park.* 1407. 2—*Lonic.* i. 33. 3—*Fuchs.* 862—*J. B.* i. *b.* 133—*Trag.* 1110.

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* The roots rubbed with milk destroy crickets and cockroaches. Swine eat it. Goats are not fond of it. Cows, sheep, and horses refuse it. Linn. Ray observes that the flowers smell like brandy, (whence in some parts of England, in reference also to the remarkable form of the fruit, the plant is denominated *Brandy-bottle.* The Greeks prepare a cordial from its flowers. E.) An infusion of a pound of the fresh root to a gallon of water, taken in the dose of a pint, night and morning, cured a leprous eruption of the arm. (The leaves and flowers are employed in tanning ; the root is still better for that purpose. Fl. Lond. This species, though less attractive than the preceding one, has an enlivening effect in combination with the other, and should be encouraged

"To spread its golden orbs upon the dimpling wave." E.)

† (Supposed to be derived from τίλον, a feather ; alluding to the appearance of the flowers and floral-leaves. E.)

Floral-leaf yellowish green, nearly as long as the fruit-stalks, and attached to it for about half its length. A large and stately tree. *Bark* smooth. *Blossoms* small, fragrant, yellowish white, cymose, pendulous. *Branches* smooth, when young often tinged with red. *Leaves* alternate, on leaf-stalks, ramifications of the veins underneath hairy. *Calyx* woolly at the edge. *Petals* blunt, concave. *Stamens* thread-shaped. *Stigma* five-cloven. E.)

LIME TREE. LINDEN TREE. (Welsh: *Pisgwydden; Gwaglwyfen.* E.)
Woods and hedges. T. July.*

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* (The Lime tree, the "*Tiliæ læves*" of the Mantuan bard, has been lauded in every age: though the Venusean courtier affects to despise the wonted assistance of its tender shreds to secure the effeminate decoration of his own person,

"Displicent nexæ *Philyra* coronæ." Od. xviii.

"Ribands from the *Linden* tree
Give a wreath no charms for me."

Sannazaro distinguished it by the epithet incorruptible, "la *incorrutibile Tiglia;*" "non sente mai corrotione di sorte alcuna;" probably alluding to the imperishable nature of its papyraceous bark. This bark also possesses the almost peculiar property of being exempt from the depredations of hares.

"The Line or Linden tree," saith Gerard, "waxeth very greate and thicke, spreading foorth his branches wide and far abroad, being a tree which yeeldeth a most pleasant shadow, under and within whose boughes may be made brave sommer houses and banketting arbors." p. 1298. The whole of Evelyn's description is peculiarly animated. He concludes, "Is there a more ravishing or delightful object, than to behold some entire streets and whole towns planted with these trees, in even lines before their doors, so as they even seem like cities in a wood? This is extremely fresh, of admirable effect against the epilepsy, for which the delicately scented blossoms are held prevalent, and skreen the houses both from winds, sun, and dust, than which there can be nothing more desirable where streets are much frequented: for thus

"The stately *Lime*, smooth, gentle, straight, and fair,
(With which no other Dryad can compare),
With verdant locks, and fragrant blossoms deckt,
Does a large, even, odorate shade project." Cowley.

Dr. Hunter adds: "The Lime is a handsome picturesque tree, forming a beautiful cone by its branches, and maintaining its body taper and straight; and as it will grow to a large size, it is very proper to be planted for avenues; it also makes a beautiful detached object in parks and open places. Although the leaves fall off very early in the autumn,

"Those virgin leaves, of purest vivid green,
Which charm'd ere yet they trembled on the trees,
* * * * *
The *Lime* first-fading;"

Yet it immediately makes amends by exhibiting its beautiful, red twigs; for which reason the red-twigged Lime should always be preferred for these purposes. If planted in a rich and loamy earth, wherein it chiefly delights, the growth of it will be almost incredible. In the pleasure-ground of the palace at Bishopthorpe, belonging to the Archbishop of York, there is a noble walk of stately Lime trees, which exceeds any thing of the kind in this island:

——— "a pillar'd shade
High overarch'd."

At Depeham, in Norfolk, a Lime tree, the "*Tilia Colossea Depemensis*" of Evelyn, measured at some distance above the ground thirty-six feet girt, and rose to a height of ninety feet. Strutt delineates one in Moor park, Hertfordshire, seventeen feet girt at three feet from the ground, and one hundred feet high; containing eight hundred and seventy-five feet of saleable timber, and which struck out nineteen horizontal branches from sixty to

Var. 2. Leaves unequally serrated: fruit cottony: cells five. Du Roi.

SMALL-LEAVED LIME or LINDEN TREE. BAST. *T. cordata.* Mill. Du Roi. Essex, Sussex, and Lincolnshire. Ray. (We incline to think

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seventy feet long:—also another in Cobham park, at the base measuring twenty-eight feet, and ninety feet in height. The recollection of our readers will readily refer to several spacious areas in English towns adorned with these trees, (and to St. James's Park, planted at the suggestion of Evelyn,) in the manner so much admired in Holland and Flanders. This species prevails more generally in Germany and the Netherlands, whence it is supposed to have been introduced into England, temp. Eliz. In regard to its claim to be strictly indigenous of Britain, we consider it may rank among the *dubia,* as the Chesnut and some others. A Lime tree in the immediate vicinity of Newstadt was for many ages so remarkable as to occasion that city to be called "*Newstadt under grossen Linden,*" and to attract the attention of many illustrious visitors, who have left tokens of their admiration. The celebrated Lime of Cleves was also of great magnificence. In the middle of the tree was cut a room of considerable dimensions, while the external parts were most curiously trimmed and tortured in the highest style of genuine Dutch taste. Peculiarly attractive is the Lime,

—— "at eve
Diffusing odours."

Not, however, limited in this respect to any particular hour, but rather by the soft humidity which then pervades the atmosphere, and proves a favourable medium.

"Nor undelightful is the ceaseless hum
To him who muses:"

Nor yet uninstructive; for there do countless animated atoms, impelled by instinct alone, impart lessons of wisdom to the higher prerogative, and, with unceasing toil, mock the best efforts of human industry. The Lime tree supports *Sphinx Tiliæ; Phalæna lanestris, dispar, antiqua, Psi, Bucephala; Aphis Tiliæ; Acarus telarius:* (*Geometra Alniaria,* and *G. crosaria.* The galls on the leaves are often the nidus of *Curculio contractus,* though similar excrescences are more frequently occasioned by different species of *Cynips.* Few trees are more subject to honey-dew than the Lime. Especially in sultry seasons the leaves become enveloped in a viscous substance, (which, stopping up the pores, proves extremely injurious), and loaded with black *Aphides.* The most accurate history of this phenomenon will be found in Linn. Tr. vol. vi. Mr. Curtis therein proves that the *egesta* of various species of *Aphides* will fully account for the glutinous and saccharine liquid so frequently observable on the leaves of Lime trees, certain kinds of Willow, Hops, and other plants; refuting the erroneous ideas of this kind of blight being occasioned by any peculiar state of the atmosphere, or by clouds of insects conveyed by a prevalent wind. A single female *Aphis* will produce nearly one hundred young ones, which quickly take possession of the under surface of leaves, and with a pointed instrument of proboscis construction pierce the plant and imbibe the vital juices for their own support. The sweet and viscous liquid voided on the superior surfaces of the leaves below affords a welcome repast to flies, ants, wasps, and other insects, but not to bees, who appear decidedly to prefer extracting for themselves more genuine honey from the fragrant flowers. The clammy matter appearing on the upper surface of the foliage may account for the vulgar supposition and name of *Honey-dew,* as descending from the atmosphere. *Aphides* abound in hot dry seasons. Mr. Curtis insists that there never exists any honey-dew but where there are *Aphides;* and that accumulated saccharine substance, and no other cause, occasions the sooty appearance, sometimes mistaken for a black mildew. Heavy rains may mechanically remove the *Aphides,* but that they are not readily destroyed, even by immersion in water for a length of time, has been experimentally proved. In stoves fumigation with tobacco-smoke will kill them, but in the open air artificial remedies are seldom applicable, and this scourge of the vegetable kingdom must be left to the natural destroyer the *Coccinella,* or Lady-bird, (who, though a favourite with many, has been too little valued for her important services,) and the *Ichneumon Aphidum,* who does not destroy as the former insect, primarily by devouring, but by puncturing the body of the *Aphis,* and therein depositing its own egg. This quickly hatches to a small *larva,* which feeds on the substance of the *Aphis,* till, having consumed the interior, it changes to a chrysalis, and ultimately escapes from the usurped

T. parvifolia of Ehrhart and E. Bot. 1705, *T. microphylla* of Ventenat, and *T. Europæa* β of Fl. Brit. no other than this variety. Woods about Pont Nedd Vechn, Glamorganshire. Mr. E. Forster, jun. Near Lord

inflated skin, an Ichneumon fly. *Muscæ Aphidivoræ* feed entirely on *Aphides*, their *larva* deposited amidst the innumerable host contributing their full share to diminish these despoilers of Flora. Nor are some of the smaller birds unassisting in rescuing the vegetable tribes from enemies, who, though

> ——"A feeble race, yet oft
> The sacred sons of vengeance, on whose course
> Corrosive famine waits, and kills the year."

Neither does the skilful farmer,

> "While they pick them up with busy bill,
> The little trooping birds unwisely scare." Thomson.

Unfavourable weather may produce blight by its own distinct operation, as the dry frosty wind principally affecting the blossoms, and causing them to fall off prematurely: or the south or south-west wind, unaccompanied by insects, the effects of which are visible in the burnt appearance of the leaves and shoots exposed to that quarter; but the prevalence of *Aphides*, often, indeed, appearing after a north-east wind, is by far the more general cause: though not

> ——— "Engender'd by the hazy north." E.)

The Lime flourishes best on the sides of hills, but it will live very well in meadow grounds. It is easily transplanted, (even of a large size, and the method recommended by Sir Henry Steuart, of Allanton, seems likely to ensure success, Vid. the "Planter's Guide." E.) Grass grows beneath it; it is useful to form shady walks and clipped hedges. (Exotic species are successfully engrafted on it. A sort of coarse stuff is prepared and worn by the shepherds of Carniola, from the outer bark. E.) The wood is soft, light, and smooth; close grained, and not subject to the worm, (the chief material for the elegant Tunbridge ware. E.) It makes good charcoal for gunpowder and for designers. It is used for leather-cutters' boards and for carved work. (The fruits, flowers, &c. of the celebrated sculptor Gibbons, (patronised in the reign of Charles II. and designated the English Lysippus), were all executed in this delicate material, (of which an eminent example is the choir of St. Paul's cathedral),

> —— "Smooth *Linden* best obeys
> The carver's chisel; best his curious work
> Displays in all its nicest touches." E.)

It is also employed by the turner. The leaves are dried in some countries as winter food for sheep and goats. Cows eat them in the autumn; but they give a bad taste to the milk. The bark, macerated in water, may be made into ropes and fishing nets. (The inner bark separates into tough layers, called *Bast*, and this is manufactured into Russian matting, serviceable to gardeners for protecting fruit trees; also for various purposes of packing. E.) The flowers are fragrant, and afford the best honey for bees, (notwithstanding the adverse sentiment of Columella), of which Virgil was aware, as appears from his beautiful description of the industrious Corycian, wherein he connects the Lime, as also the Pine, with his apiary.

> ——— "Et spumantia cogere pressis
> Mella favis; illi *Tiliæ*, atque uberrima Pinus."

The famous Kowno honey is made exclusively from the blossoms of this tree. The *Lipez* or genuine Linden honey, is, Pallas assures us, of a greenish colour, and delicious flavour. It is taken from the hive immediately after the Lime tree has been in blossom. The ancestors of our great naturalist are said to have derived their surnames of Lindelius, Tiliander, and Linnæus, from a large Linden tree which grew on his native farm. The inhabitants of Switzerland make a favourite beverage from the flowers. Dr. Chandler tells us that in the South of France, an infusion of the blossoms is esteemed as a remedy for coughs and hoarseness. At Nismes, they are eagerly gathered, dried, and kept for these purposes. Tea of Lime blossoms is a soft, well-flavoured saccharine julep, in taste much

Leicester's woods at Denham near Barrow, Suffolk. Sir T. G. Cullum. Bot. Guide. White Wood near Gamlingay, Cambridgeshire. Rev. R. Relhan. By the river on the side of Garregwen rocks, near Garn, Denbighshire. Mr. Griffith. E.)

Var. 3. *Fruct. hexang.* Fruit six-cornered.

Whitstable, Surry, and near Darking. Merret.

Var. 4. *Fruct. quadrang.* Fruit four-cornered: small branches red: leaves with a soft woolliness. Ray.

Red Lime Tree. T. corallina. Sm. *T. grandifolia.* Ehrh. Stoken Church Wood. Ray.

(It has been attempted to designate several species of British *Tilia*, as *T. Europæa, grandifolia,* and *parvifolia,* but the characteristics are supposed to vary into each other. In the second above named, Schkuhr represents the stamina as polyadelphous, and the lobes of the stigma converging: in the third species the stamens as unconnected, and the lobes of the stigma diverging. In both, the number of cells of the capsule is inconstant, according to Persoon. E.)

CISTUS.* *Bloss.* five petals: *Cal.* five leaves, two of them smaller: *Caps.* from one to ten-celled: from three to ten-valved, opening at the apex. E.)

(1) *Shrub-like; without stipulæ.*

C. (**MARIFO'LIUS.** E.) Stems decumbent at the base: leaves hairy, opposite, oblong, flat, hoary beneath, flowers in bunches.

Hook. Fl. Lond. 171—*E. Bot.* 396. E.)—*Dill. Elth.* 145. 173—*J. B.* ii. 18.

Stems numerous, (three to six inches high. E.) *Flowering branches* ascending, hairy. *Leaves* egg-shaped, blunt, sessile, green on both sides but covered with white hairs. *Bunches* terminal, of three or four flowers, with small spear-shaped floral leaves. Woodw. *Petals* four or five, inversely egg-shaped, very entire. *Flowers* yellow, small. *Calyx* hairy. *Style* knee-jointed. This plant is liable to vary in hairiness according to situation. Hook. E.)

HOARY DWARF CISTUS. *C. marifolius.* Linn. *C. hirsutus.* Huds. *C. anglicus.* Linn. Mant. With. Ed. 3. E.) Mountainous pastures and rocks. On the west side of Bentham Bank, one mile from Kendal;

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resembling the juice of liquorice. Pliny informs us that chaplets worn at the Roman feasts were interwoven with the flexible twigs of the *Tilia*, and Bellonius states that the Grecians employed the wood for making bottles, which were usually lined with rosin. It was one of the papyraceous trees of the ancients, the *Philira*; and a work of Cicero written on the inner bark is preserved in the library at Vienna. The Lime tree contains a gummy juice, which being repeatedly boiled and clarified, produces a substance like sugar. Missa, the French physician, pounding the fruit of Lime trees obtained a butyraceous substance much resembling chocolate. This experiment was repeated by Margraff with equal success, and probably some of the American species may yield a produce more completely similar. Ventenat. Dr. Swediaur recommends an infusion of water prepared from the fragrant blossoms of the Lime as an antispasmodic. Hoffman reports its success in curing an inveterate epilepsy. E.) Indeed, so numerous are the valuable purposes to which this tree may be applied, that "*Tiliæ* ad mille usus petendæ" became proverbial even in the days of Pliny. E.)

* (From *cista*, a cist, or little chest; the seeds being thus enclosed in the capsule. E.)

Buckbarrow bank scar, between Bridgsteer and Cowsick, and about Cartmel Wells, Lancashire. Ray. Gloddaeth, Carnarvonshire. Pennant. (Near the Black Ark, on Cronkley Fell, in Teesdale, at an elevation of 2,000 feet. Mr. Winch. On Arthur's Round Table, in the parish of Llanfihangel Dinsylwi, Anglesey. Welsh Bot. E.) P. May.

(2) *Herbaceous; without stipulæ.*

C. GUTTA'TUS. Leaves opposite, spear-shaped, three-ribbed: bunches without floral-leaves.

Dicks. H. S.—Ger. Em. 1281. 19—*Park.* 661—*J. B.* ii. *a.* 14. 1.

Whole *plant* covered with expanding hairs, (dark green, rather fragrant. E.) *Stem* upright. *Leaves* sessile, three or four pairs. *Bunch* slender, terminal. *Flowers* upright, but when just out of blossom pendent. *Fruit* upright. *Fruit-stalks* long, slender. *Flowers* pale yellow. *Petals,* with a dark reddish spot at the base, falling off in a few hours; sometimes observed without spots. *Stem* about a foot high. E.)

SPOTTED-FLOWERED CISTUS. (Welsh: *Cor-rosyn rhudd-manog.* E.) Sandy pastures on M. Llech ddue, near Holyhead, Anglesey; Mr. Brewer; and not in the Isle of Man. Rev. H. Davies.* E.) A. June.†

(3) *Herbaceous; with stipulæ.*

C. (LEDIFO'LIUS. Pubescent: leaves spear-shaped: fruit-stalks upright, opposite to the leaves, shorter than the calyx: flowers solitary.

(*E. Bot.* 2414. E.)—*Lob. Obs.* 552. 1; *and Ic.* ii. 118. 1—*Ger. Em.* 1280. 17.

Petals yellow, smaller than the calyx, very soon shedding, sometimes wanting. Huds. (*Stem* nearly upright, undivided, sometimes branched at the bottom, cylindrical, hairy, leafy, few-flowered. *Leaves* opposite, blunt, very entire; narrowed at the base, downy on both sides, one and a half inch long. *Stipulæ* one-third the length of the leaves, acute. *Calyx-leaflets* tapering to a point, marked with nerves, hairy. *Capsule* large, triangular, polished, hairy, at the upper part of the angles, single-celled, the *receptacles* being not at all prominent so as to form partitions. *C. salicifolius,* with which this plant has been confounded, differs in being only one half the size; in having a more branched stem, horizontal peduncles, and calyx half as long again. Sm.

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* (For the correction of this and a few other topographical errors, originating in a like misconception, we are indebted to the late ingenious author of the Welsh Botanology, who, happening to possess a copy of Brewer's Diary, was enabled to ascertain that "Brewer never visited the Isle of Man;" and that "the Mona of Dillenius,—of Hudson, with regard to *C. guttatus,* and wherever he quotes Dillenius and Brewer, is not the Isle of Man, the Mona of Cæsar; but the Mona of Tacitus, and the hallowed scene of Mason's Caractacus." E.)

† (In the middle of summer, Curtis remarks, when the mornings are long and the solar rays powerful, the petals of this species will frequently fall off before nine o'clock; towards autumn we have known them continue till noon: immediately on their falling, the three larger leaves of the calyx close together over the stamens and pistil, and secure them from any injury they might be liable to sustain from the early loss of their more delicate covering. Another exemplification of the care and skill observable in the economy of nature, which amply recompenses attention even of the humblest productions. E.)

Ledum-leaved Cistus. *C. ledifolius.* Linn. *C. salicifolius.* Huds. With. Ed. 3 and 4. Sandy meadows and pastures, rare. On Brent Downs, Somersetshire. Hudson; and recently by other Botanists.
A. June—July. E.)

(4) *Somewhat shrub-like; with stipulæ.*

C. helian'themum. Trailing: stipulæ spear-shaped, fringed: leaves oblong, edges revolute, somewhat hairy (above, hoary beneath. E.)

Curt.—(*E. Bot.* 1321. E.)—*Kniph.* 12—*Fl. Dan.* 101—*Walc.* 5—*Park.* 656. 1—*Clus.* 1. 73. 1—*Lob. Ic.* ii. 117. 1—*Ger. Em.* 1283. 4—*J. B.* ii. 15. 2—*Lob. Ic.* ii. 117. 2—*Ger. Em.* 1282. 3—*J. B.* ii. 16. 1—*Ger.* 1100. 3 *and* 2—*Matth.* 741—*Trag.* 221.

Stems three to six inches long, thread-shaped, a little woolly. *Leaves* egg-spear-shaped, in pairs at each knot of the stem, above green and somewhat hairy, cottony underneath. *Leaf-scales* four at each knot of the stem. *Calyx*, the three *larger leaves* composed of strong green ribs, connected by a semi-transparent dotted membrane; the two *outer* spear-shaped, green, and which are more like floral-leaves. (*Flowers* in terminal racemes, showy, expanding only in sunshine, and scarcely lasting a day. E.) *Petals* yellow, a little toothed on the outer part, nearly circular. E.) (The *stamens* exhibit a curious instance of irritability. When touched with a pin or bristle they retire from the style, and lie down in a spreading form on the petals. This can be seen only in calm warm weather, and when the flowers have not been ruffled by insects. Dr. Hope, in E. Bot. E.)

Dwarf Cistus. Little Sun-flower. (Welsh: *Cor-rosyn cyffredin.* E.) Mountainous meadows and pastures, especially in calcareous soil. (Leckhampton Hill, near Cheltenham. Rev. S. Dickenson. Box Hill, Surry. Mr. Winch., High bank half a mile from Hatton on the road to Warwick. Perry. Anglesey. Welsh Bot. (On the limestone hills, coast of Durham and Northumberland. E.) On Salisbury Craigs, near Edinburgh. St. Vincent's, and other calcareous rocks near Bristol. On the whole range of high and dry chalky lands with a flinty surface, extending from Salisbury Plain to the north of Gloucestershire.
P. June—Aug.

Var. 2. *Fl. alb.* Blossoms white. Gogmagog Hills. (Wood Ditton, Cambridgeshire. Relhan. E.)

Var. 3. *Fl. ros.* Blossoms rose-coloured.

(Var. 4. *Surreianus:* "petalis florum perangustis." R. Syn. 341. Petals lanceolate.

Dill. Elth. 145. 174—*E. Bot.* 2207.

Whoever has paid attention to the habit of *C. Helianthemum* will find it liable to considerable variation, both in the size and shape of its leaves and petals; and as to the leaves "*excavato-punctata,*" Fl. Brit. "*dotted* beneath," with "little hollows or depressions," Eng. Fl. first noted by Lightfoot in his Herbarium, (not in his publication), which has been recently revived to corroborate a supposititious species; we have reason to believe that this latter distinction so far from being generally apparent, will very rarely be found. Neither is it peculiar to this variety, for Mr. W. Christy, (the re-discoverer of Mr. Edward Du Bois' Croydon plant, recorded in Ray Syn.) by whose kindness we are favoured with specimens now before us, observes, "Nothing of this kind has ever come under my notice, but in the plants I have seen there is no perceptible difference in the foliage from *C. Helianthemum*. I once noticed the latter with *dotted* leaves similar to those ascribed to *C. Surreianus*, but the plant was evidently diseased." What remains then to constitute *C. Surreianus* a distinct species?

Mr. Christy further remarks, after attentive cultivation, that the lanceolate petals gradually assume the common appearance of those of *C. Helianthemum*, becoming also more or less irregularly cleft; and considers the present variety, in its extreme form, as defective in the parts of fructification, the stamens and pistils being in some flowers almost imperceptible, the stamens producing no pollen; the plant being incapable of propagating itself by seed, and consequently very local and rare. It further appears that the flowers which had declined to the common appearance of *C. Helianthemum* did perfect their seed, so that from some hundreds of flowers about six capsules of ripe seed were obtained. The above opinion is confirmed by the singular fact, (also communicated by Mr. Christy), that among some seedlings of *C. Helianthemum*, on their flowering, one appeared different to the rest, and exactly *C. Surreianus*, or with petals even narrower than in the Surry plant.

C. Surreianus. Linn. With. to Ed. 7. Sm. Willd. Galp. *C. Helianthemum* δ. Huds. Near Croydon, Surry. Du Bois, in R. Syn. Among grasses, &c. on the border of Croomhurst wood. Addington, Surry. W. Christy, Esq. June, 1826. E.)

(A plant more nearly resembling *C. Helianthemum* than any other species, but "larger, with broader leaves," is represented in E. Bot. 2208, and said to be the real *C. tomentosus* of Scopoli. Smith observes that the leaves, flower-stalks, and calyx are much more hoary and downy than in *C. Helianthemum*, but that cultivation impairs this; and admits that a decisive specific character is still wanting. This plant was communicated by Mr. G. Don from Scotland, where it was also gathered by Mr. Dickson. E.)

C. POLIFO'LIUS. Trailing: leaves oblong-egg-shaped, revolute at the edges, hoary beneath: calyx even: petals serrated.

(*E. Bot.* 1322. E.)—*Dill. Elth.* 146. 172—*Pluk.* 23. 6.

(In size and habit like *C. Helianthemum*, but essentially distinct, though not known in any other part of the world than the place here specified. Sm. E.) *Flowers* white. *Stems* numerous. *Flowering branches* ascending, cottony, white. *Leaves* opposite, revolute at the edge, with a prominent mid-rib underneath, cottony, white. *Bunches* terminal. *Fruit-stalks* short. *Leaf-scales* spear-shaped. *Calyx* purplish, slightly hairy; the two *outer leaves* spear-shaped, minute. Woodw. (The stellate form of the pubescence is not a peculiar characteristic, as the same prevails occasionally, according to Hooker, in *C. Helianthemum*. E.)

WHITE MOUNTAIN CISTUS. Brent downs, Somersetshire, near the Severn Sea. (Also found by the Rev. Aaron Neck at Babbicombe, Devon. E. Bot. Plentiful on the rocks above Torquay. Rev. Dr. Beeke. Bot. Guide. E.) P. July.*

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* (The British species of *Cistus*, or, as these plants are sometimes called, *Rock-rose*, are all of them more or less to be admired for their colour and form; nor are they entirely destitute of that gummy exudation which emits an agreeable balsamic fragrance, and which in hotter climates, as Greece and the South of Europe, produces the valuable gum *Ladanum*, formerly collected from the beards of goats which browsed upon *C. Creticus*, and even now

DIGYNIA.

(PÆO'NIA.* *Cal.* five-leaves: *Petals* five: *Styles* none: *Follicles* with many *seeds*. E.)

(P. CORAL'LINA. **Leaves twice ternate: leafits egg-shaped, undivided, smooth: seed-vessels downy, recurved.**

E. Bot. 1513—*Mill. Ill. t.* 47.

Stems about two feet high, annual, simple, leafy, cylindrical, smooth, more or less red. *Leaves* smooth; the uppermost often ternate at the extremity only, with a pair of simple leafits below. *Leafits* sharp-pointed, entire, sometimes veined with red. *Flower* terminal, solitary. *Calyx* of five concave irregular leaves. *Petals* five, crimson, regular, roundish. *Stamens* red, with yellow *anthers*. *Germens* mostly three or four, egg-shaped, white, downy, with recurved, crimson *stigmas*. *Seeds* black, shining, intermixed with crimson, abortive ones.

ENTIRE-LEAVED OR CORAL PEONY. *P. corallina.* Retz. *P. officinalis* β. Linn. *P. mas.* Matth. Less frequent in gardens than *P. officinalis* or *fœmina*. This very showy addition to the British Flora was first introduced to the notice of Botanists by Mr. F. Bowcher Wright, in 1803, as growing undoubtedly wild, and in great profusion, in the rocky clefts of the island called Steep Holmes in the broad part of the river Severn. It is conjectured to have grown there for ages. Two fishermen testify having gathered its flowers sixty or seventy years ago. According to Gerard, once found on a rabbit warren near Gravesend, but no traces of it remain. P. May—June. E.)†

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by the tedious uncertain process of the *ergastiri*. The foreign kinds are, it must be admitted, more showy than our own, but some of the latter are worthy of garden culture, and thrive in a dry soil. Though the flowers are extremely fugacious, by intermixing the several species, a succession may be obtained for two or three months. E.)

* (After the physician PÆON, immortalized for having cured the wounds received by the gods during the Trojan war, as some ingeniously infer, with the aid of this plant. E.)

† (Pæonies, double or single, white or crimson, are splendid acquisitions to the garden and shrubbery. Few aquatic excursions of a day can prove more interesting to the naturalist, especially the geologist, ornithologist, and botanist, than a sail from Bristol, through the romantic pass of St. Vincent's rocks, to the Helmes Islands. The Steep Holmes represents the rugged truncated apex of a submarine mountain, whose abruptly precipitous sides are only accessible at one proper landing-place. Amidst the shelving rocks and loose shingly stones, a few hundred yards from, and at an elevation of nearly one hundred feet above, this spot, at the eastern end of the island,

"There may ye see the *Peony* spread wide,"—

together with the scarcely less rare *Allium ampeloprasum*, as the Editor had the gratification to behold in June, 1826. The latter plant has effected a lodgment below the light house on the Flat Holmes, but the Peony is altogether peculiar to the sister island, and how far it may be deemed an aboriginal, strictly indigenous, or derived fortuitously from some wrecked Levanter, or possibly, though not probably, escaped from the little enclosure, whose ruinous walls and few remaining vestiges seem

"To mark where a garden had been,"

must remain problematical, so far as our investigations are concerned; no vessel having been stranded within the memory of man, nor any inhabitant dwelt thereon, save the solitary fisherman who makes the crazy but his cheerless abode, and that only through the dreary season of winter. The Peony also extends over the crests of the northern preci-

POTE'RIUM.* *Stamens* and *pistils* in different flowers on the same plant: *Calyx* four leaves: *Bloss.* with four divisions:

B. *Stam.* thirty to forty.

F. *Drupa* juiceless, beneath, one or two-celled, formed of the indurated tube of the blossom.

P. sanguisor'ba. Thornless: stems somewhat angular.

Dicks. H. S.—(*E. Bot.* 860. E.)—*Ludw.* 197—*Kniph.* 1—*Curt.*—*Matth.* 1034—*Dod.* 105. 1—*Lob. Obs.* 412. 3; *and Ic.* i. 718. 2—*Ger. Em.* 1045. 1—*Park.* 582. 1—*Ger.* 889. 1—*Sheldr.*—*Gars.* 457—*Fuchs.* 789—*J. B.* iii. *b.* 116—*Blackw.* 413—*Col. Ecphr.* i. 124—*H. Ox.* viii. 18. 1.

(*Stems* one to two feet high, branched, leafy, angular, many-flowered, smooth. *Leaves* unequally winged, leafits roundish, egg-shaped, serrated, smooth, slightly glaucous. *Peduncles* terminal, elongated, naked. Fl. Brit. *Fertile flowers* at the top of the spike. *Barren flowers* fewer, greenish, sometimes purplish from the protruded stamens: both together forming a globose head. *Nut* quadrangular. E.) The plant has the habit of *Sanguisorba officinalis*, and its fruit also bears a near resemblance, but the number and disposition of the stamens, &c. will readily distinguish them.

Burnet. (Welsh: *Gwyddlwdn cyffredin.* E.) In dry calcareous soil. Brathay meadows, near Ambleside, and elsewhere in Furness Fells. Mr. Atkinson. Weaver Hills, Staffordshire. Mr. Pitt. St. Vincent's Rocks, near Bristol. Salisbury Plain. (Painswick Hill, Gloucestershire. Mr. O. Roberts. In Anglesey. Welsh Bot. About Alresford, Hants, Salisbury. Road side between Dunfermline and Saline; and Eildon hills, near Montrose. Maughan. Hook. Scot. Abundant on the Flat Holmes, in the Bristol Channel. E.) P. April—May.†

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pieces, but the herbage more general consists of the gigantic *Smyrnium olusatrum*, *Lavatera arborea*, *Hyosciamus niger*, and a brush-wood of *Ligustrum vulgare*. The seeds have been strung and worn round the neck as beads, ornamental from their beautiful colour, (whence, probably, the specific name), and, in a more credulous age, not without reference to certain cabalistic purposes, as a *Fuga Dæmonum*, and protector from the powers of darkness:—" but it is no marvell," saith Gerard, " that most superstitious and wicked ceremonies are found in the bookes of the most ancient authors, for there were many things in their time very vainly fained and cogged in for ostentation sake, as by the Aegyptians and other counterfeit mates."—The Daurians are said to boil Peony roots in broth; and to prepare a tea from the bruised seeds, called *Dschina*. The efficacy of the root was likewise pre-eminent among " *Pæoniæ herbæ;* " (Virg. Ovid.) plants celebrated for sanatory virtues. E.)

* (From ποτεριον, a cup; or cool tankard, in which this herb is sometimes an ingredient. E.)

† The leaves and seeds are mildly astringent, and have been recommended in dysenteries and hemorrhages. Lewis. The young leaves are sometimes used in salads, and in cool tankards. When bruised they smell like cucumber. It has of late years been cultivated, as affording food for cattle early in the spring; and growing so luxuriantly, as to allow of three mowings during the summer. With. Ed. 1. p. 78. On Salisbury Plain, between Salisbury and Everley, this plant forms almost the whole staple of the herbage over a great extent of that most excellent sheep-walk. It is kept very close by the large flocks which depasture on it every day, except here and there a flower stem which is left growing. I have no doubt but it is a most valuable plant in hard stocked sheep pastures. Cows prefer it to clover, but sheep and horses do not. Mr. Pitt. As it only appears in a calcareous soil, the failure in its cultivation may have arisen from want of attention to that circumstance, and cattle may dislike it when fully grown, though when close bitten it proves so

TRIGYNIA.

DELPHIN'IUM.* *Calyx* none: *Petals* five or six: *Nectary* cloven, horn-shaped: *Caps.* leguminous, many-seeded.

D. CONSOL'IDA. Capsule solitary: nectary of one leaf: stem subdivided, spreading.

Riv. Pent. 124, *Delphinium*—*Kniph.* 2—(*E. Bot.* 1839. E.)—*Ludw.* 54—*Blackw.* 26—*Fl. Dan.* 683—*Lonic.* i. 182. 2—*Fuchs.* 27—*Trag.* 569—*J. B.* ii. *a.* 210—*Dod.* 252. 2—*Lob. Obs.* 427. 1, *and Ic.* i. 739. 2—*Ger. Em.* 1033. 5—*Ger.* 923. 4—*Park. Par.* 279. 3—*Dod.* 252. 1—*Lob. Obs.* 426. 2, *and Ic.* i. 739. 1—*Ger. Em.* 1082. 1.

(*Stem* one to two feet high. E.) *Branches* cylindrical. *Leaves* divided down to the base into three or five parts, which are deeply cut into slender strap-shaped segments often forked at the end. *Floral-leaves* two, strap-shaped, opposite. *Petals* irregularly scolloped at the edge; the lateral ones broadest; the uppermost spear-shaped, not blunter than the rest, rather shorter than the nectary, but projecting backwards into a conical tube. *Nectary* placed within the upper petal. *Anthers* double, yellow. *Germen* conical, wholly. *Styles* none. *Summits* two, white, small, fleshy, flatted, and lying close together. *Flowers* blue;

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valuable to sheep. (Mr. Salisbury considers it highly estimable. He also states it to be a favourite food of deer. Mr. Holdich affirms Burnet to be valuable as a winter food, from its warm and stimulating nature, especially combined with turnips, and by no means objectionable in hay. Mr. Sinclair states that it will succeed in soils unsuitable to Lucern, sainfoin, or clover; that its hardy nature, keeping green all winter, and its early growth, render it desirable. Another authority in favour of Burnet may be found in Encyc. Brit. where it is stated to "prove an excellent winter pasture when hardly any thing else vegetates. Other advantages are: it makes good butter; it never blows or swells cattle; it is fine pasture for sheep; and will flourish well on poor, light, sandy, or stony soils, or even on dry chalk hills. The cultivation is neither hazardous nor expensive, the land being prepared as for turnips. The severest frost never injures this plant, and the oftener it is fed the thicker are its leaves, which spring constantly from its root, and their flat circular spread will prevent the growth of weeds." A *Coccus* may be found about the roots of Burnet, which was formerly used for dyeing silk and wool a rose colour. In Britain it is superseded by the Mexican Cochineal, but the Moors are said still to make use of it. As may be remarked of the Snapdragon and some few other plants, so our present species possesses in an extraordinary degree the faculty of preserving its verdure, and flourishing amid surrounding aridity and exhaustion. It is probable that such plants, observes the author of the "Journal of a Naturalist," have the power of imbibing that insensible moisture, which arises from the earth even in the driest weather, or from the air which passes over them. The immense evaporation proceeding from the earth, even in the hottest season, supplies the atmosphere constantly with humidity; and as every square foot of this element can sustain eleven grains of water, an abundant provision is made for every demand. In noting this phenomenon, we cannot but perceive, in the perpetual transmission of these refreshing dews of heaven from one portion of matter to another, for mutual sustentation, a beneficent ordination of Providence, and a beautiful illustration of that compensatory system which pervades the universe, and is not even limited to the material world. In the present instance, without this unceasing process of evaporation and restitution, this never-failing supply of circulating medium, as it were, all nature would stagnate: neither animal nor vegetable life could long subsist. And thus in the moral world, the irreversible decree of mutual dependance, by enforcing an endless interchange of reciprocal good offices, cements the social compact, and promotes the harmony of the whole. E.)

* (From δελφινιον; from a fancied resemblance of the unopened flower to the Dolphin of the ancients, as displayed in heraldry.

by cultivation white, purple, red, or bay, (in a terminal cluster of few. Seeds angular, rough. E.)

FIELD LARKSPUR. (DOLPHIN-FLOWER. E.) Corn-fields. Swaffham Field. Ray. Lower Road between Cambridge and Gogmagog Hills. Relhan: with all the varieties of colour. Mr. Woodward. (Near Bury. Rev. Dr. Goodenough. Corn-field near Ripton, rare. Mr. Brunton. In a field by Pershore. Merret. Fields about Aldborough, at the Hall Farm. Rev. G. Crabbe. About Feltwell, near Brandon. Mr. F. Smith; and at Barton Bendish, and Oxburgh, Norfolk. Rev. R. Forby. Hebburn Ballast Hills, Durham. In fields near the Lough, on Holy Island, Northumberland. Mr. Winch. In a limestone quarry near Bishopwearmouth. Mr. W. Backhouse, jun. Winch Guide. In several fields near Blandford. Pulteney. Corn-fields at St. Leonard's Farm, near Bedford. Rev. Dr. Abbot. E.) A. June—Sept.*

PENTAGYNIA.

(ACONITUM.† *Cal.* none: *Pet.* five, the upper one hooded: *Nect.* two, recurved, stalked, under the hood. E.)

A. NAPEL'LUS. Upper petal arched at the back: lateral ones hairy at the inner side: germens three, smooth: leaves deeply five-cleft, cut, with linear segments, furrowed above.

Woodv. t. 6—*Dod. Pempt.* 442—*Ger. Em.* 972—*Lob. Ic.* 679—*Trag. Hist.* 248.

Stem erect, (three to four or five feet high, E.) simple, leafy, clothed with minute close hairs, and terminating in a solitary, simple, upright cluster of large dark-blue *flowers*. *Leaves* alternate, on short stalks; nearly smooth on both sides, paler beneath.

WOLF'S-BANE, or MONK'S-HOOD. FRIAR'S-CAPS in Devon. By the sides of streams. By the side of the river Teme, Herefordshire; and still more abundantly on the banks of a brook running into that river, to all appearance truly wild. Rev. E. Whitehead, C.C.C. Oxon, 1819. In watery ground, on both sides of a brook, at Ford, near Wiveliscomb, Somersetshire, for the course of a mile or more, a well as in other similar situations in that neighbourhood, 1825. Mr. T. Clark, jun. P. June—July. Sm. Eng. Fl. E.)

The propriety of the above interesting addition to the British Flora is further confirmed by the observation of Frederick Russell, esq. by whom it was found in an unquestionably wild station in Devonshire, 1827. In the course of the same autumn the Editor, directed by the the above-named gentleman, had the satisfaction to behold this stately plant growing (together with *Hypericum Androsæmum*) in some profusion on the margin of a limpid stream between two and three hundred yards below Ogwell mill, in a small meadow, with a foot-path leading down the opposite side of the stream; a spot not less remarkable for its lovely sylvan scenery, in the midst of Bradley woods, near Newton, than attractive to the antiquarian from its proximity to the ancient seat of the Yarde family. E.)*

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* The expressed juice of the petals, with the addition of a little alum, makes a good blue ink. The seeds are acrid and poisonous. When cultivated the blossoms become double, (and, in this case, the petals frequently increase to the exclusion of the spur. Few parterres can exhibit a more brilliant display than those of the finer kinds of Larkspur, as either derived from our native, or foreign species! E.) Sheep and goats eat it. Horses are not fond of it. Cows and swine refuse it. *Phalæna Delphinium* lives upon it. Linn. (It is said likewise to constitute the favourite food of the rare and singularly elegant moth, and caterpillar, *Chariclea Delphinii*. Curt. Brit. Entom. v. 2. pl. 76. E.)

† (Theophrastus derives the name from Ακονις, a city of Bithynia, near which it is said to abound: other etymologists deduce it from ακων, ακη, a dart, savage nations poisoning their missiles with a preparation from certain species. E.)

AQUILE'GIA.† *Calyx* none: *Petals* five: *Nectaries* five, horn-shaped, alternating with the petals: *Caps.* five, distinct.

A. VULGA'RIS. Nectaries incurved, nearly as long as the petals: leafits all on leaf-stalks, lobes distant, roundish, bluntish: (capsules hairy. E.)

Kniph. 5—*Ludw.* 181—*E. Bot.* 297—*Fl. Dan.* 695—*Mill. Ill.*—*Dod.* 181. 1—*Lob. Obs.* 440. 2, *and Ic.* i. 761. 1—*Ger. Em.* 1093. 1—*H. Ox.* xii. 1. *row*

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* (Not unfrequently met with in rustic gardens, with white, rose-coloured, and variegated flowers: nor can our Island longer claim entire exemption from it as a native; notwithstanding Dryden recounts among our blessings, that

> "Our land is from the rage of tigers freed,
> Nor nourishes the lion's angry seed,
> Nor poisonous *Aconite* is here produced,
> Or grows unknown; or is, when known, refus'd."

And with equal reference to the malign influence of the Monk's-hood, thus are depicted the stepdames in the iron age of Ovid,

> "Lurida terribiles miscent *Aconitæ* novercæ."

That this herb is one of the most powerful of vegetable poisons cannot be doubted. "The force and facultie of Woolfe's-bane is deadly, both to man and all kinds of beasts;" says Gerard, who records several instances of its fatal effects; but it appears that various plants of somewhat similar names have been confounded by ancient writers, and are scarcely to be discriminated by the moderns. For a well-authenticated case of the deleterious virulence of this species, vid. Phil. Tr. vol. 33. an. 1732. Nevertheless, as frequently happens when rightly understood, qualities the most baneful may be converted into blessings, and in the present instance Dr. Storch, a German physician, advocates the medicinal virtues even of the Aconite. Dr. Lempriere (Lectures p. 234), declares it to possess a caustic suffocating quality, by which swallowing is immediately affected and the stomach corroded. The roots are particularly virulent. The juice was formerly used by savage nations for the purpose of poisoning arrows. Another writer states that the flowers sometimes communicate, in a degree, their noxious quality even by being smelled to; and that wearing them on the head may occasion "a violent megrim." Of the bad qualities of these plants we sometimes avail ourselves to get rid of vermin. The juice is also used to poison flesh with, for the destruction of wolves, foxes, and other ravenous beasts. It is remarkable that the blue-flowered kinds are much more virulent than those with yellow or white flowers. Physiologists suppose the pernicious effects to be produced by irritating the nervous coats of the stomach and intestines, so as to occasion violent convulsions through the whole body. To relieve the stomach of its noxious contents an infusion of tobacco, followed by oily and mucilaginous medicines have been recommended. Monkshood should not be planted where children have access, lest they should put the leaves or flowers in their mouths, or rub them about their eyes; for a great disorder may be thus occasioned; and the farina of the flowers blown into the eyes will cause dangerous inflammation. E.)

† (From *aquila*, an eagle; and *lego* to gather or collect; the nectaries resembling an eagle's claws: as probably the English name may be derived from a fancied resemblance of the same parts to a dove's claw, or head and neck, as some imagine. E.)

3. 1—*Fuchs.* 102—*Trag.* 137—*J. B.* iii. 484. 1—*Park.* 1367. 1—*Matth.* 629—*Swert.* ii. 8. 9—*Lonic.* i. 85. 1—*Column. Phyt.* 1—*Ger.* 935. 1.

Stem upright, three feet high, branched, somewhat angular, (bearing several flowers. E.) *Leaves,* the lower on leaf-stalks, doubly threefold; *leafits* with three lobes, cut-scolloped; the uppermost leaves digitate, lobes oval, very entire. *Leaf-stalks* from the root very long. *Blossoms* blue, or purple. *Seeds* black. *Flowers* pendent. Lyons. Sometimes of a yellow green.

(Var. *Fl. alb.* Flowers white, just above the beach below Trefarthen, Anglesey. Rev. Hugh Davies. E.)

(Hudson's *A. alpina,* said to grow in the mountainous woods of Westmoreland, is a lesser variety, with the nectary extended, and but little incurved; and, according to Smith, wholly distinct from the *A. alpina* of Linnæus, which has blossoms double the size. E.)

COLUMBINE. (Welsh: *Madwysg cyffredin.* E.) Woods and thickets. Upper part of Girling Trough, near Conniston; Kilnsay, Yorkshire. Curtis. Bedingham, Norfolk, with blossoms blue or white; near Swaffham, with blossoms the same, or pale red. Mr. Woodward. Near Goldsithney, Cornwall. Mr. Watt. Souston's Roch, near Shelsey, Worcestershire. Mr. Ballard. About Falmouth. Side of a common near which *Ligusticum Cornubiense* grows, one mile and a half from Bodmin. St. Vincent's Rocks, Bristol. (In woods above Stowting, Kent. Mr. W. Hutchinson. Little Baddow Common, Essex; Arnside, and Kendal Fell, Westmoreland. Mr. W. Christy. In the Dean below Dalton-le-Dale, Durham; near Middleton, and at Baydales; on Ramps Holm, in Derwent-water, (so named from the quantity of Ramps, *Allium ursinum* growing on it,) and in woods at the head of that lake; also at the head of Wastwater. Truly a native of our woods, and the borders of the Cumberland lakes, remarks Mr. Winch. In Penmon deer-park, the old park near Beaumaris, &c. Welsh Bot. Corley Woods, Warwickshire. Bree. Common in Monmouthshire. Purton. Mouth of the Fyars, Loch Ness. Dr. Bostock. Bradley Woods, and other spots near Newton, Devon. E.) P. June.[*]

HEXAGYNIA.

STRATIOTES.[†] *Sheath* two leaves: *Calyx* three-cleft, or of three leaves: *Petals* three: *Berry* six-celled, hexangular, beneath.

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[*] The beauty of its blossoms has long introduced the Columbine into our flower borders. Goats eat it. Sheep are not fond of it. Cows, horses, and swine refuse it. (Its medicinal qualities were once deemed considerable, but are not well defined, and in some instances it is said to have proved fatal to children. The elongated and incurved nectary of this flower seems to bid defiance to the entrance of the bee in search of the hidden treasure, but the admirable ingenuity of the sagacious insect is not to be thus defeated, for on ascertaining the impracticability of effecting his usual admission, with his proboscis, he actually penetrates both calyx and blossom near the depôt of honey, and thus extracts the latent sweets without further difficulty. Cultivation produces various colours; and Mr. Phillips observes in "Flora Historica," the singular circumstance, that it has three distinct modes of doubling its flowers; viz. by the multiplication of the petals, to the exclusion of the nectaries; by the increase of the nectaries, to the exclusion of the petals; and frequently by the multiplication of the nectaries while the proper petals remain. E.)

[†] (From ϛρατιωτης, a soldier; or, perhaps, ϛρατος, in reference to its crowded sword-like leaves. E.)

S. **ALOI'DES.** Leaves triangular-sword-shaped: edges serrate with prickles.

(*E. Bot.* 379. E.)—*Fl. Dan.* 337—*Mill Ill.*—*Bergen de* [illegible] *p.* 1—*Dod.* 589. 1—*Lob. Obs.* 204. 1, *and Ic.* i. 375. 2 *Ger. Em.* 826—*Ger.* 677—*Park.* 1249. 1—*J. B.* iii. 787. 1—*Pet.* 71. 5.

(A stonoliferous aquatic, with numerous radical *leaves*, six to nine inches long, resembling those of an aloe. *Flower-stalk* solitary, shorter than the leaves, single-flowered. *Flower* white, large. *Stamens and Pistils* generally in the same flower, but they have been observed in different plants; and where they are found in the same flower, one or the other is barren. Linn. (Smith explains that such plants are not to be considered as dioecious, but rather as exhibiting casual imperfection, the anthers in one flower, the stigmas in another, not unfrequent in plants that increase much by root. E.)

WATER ALOE. FRESH-WATER SOLDIER. Slow streams, and fen ditches. In Norfolk and Suffolk, frequent. Mr. Woodward. (Also in the marshy parts of Lincolnshire, and Cambridgeshire. E.) In pools about four miles from Holmes Chapel, Cheshire. Mr. Hunter. In the Gyme, near Thorn, Yorkshire. Mr. Robson. (Near Beverley Col. Machell. Lowndham Hall Mere, Suffolk. Crabbe. At Bradwell, and elsewhere about Yarmouth; on Haddisco Dam, close by the turnpike-gate Mr. Wigg. In abundance on Hoveton Common, Norfolk. Mr. Dawson Turner. Near the New Bridge at Gainsborough. Sir T. G. Cullum. Bot. Guide.* Ponds at Nether Witton, Northumberland. Mr. Winch. In an outlet of the Ouse, below Hartford. Dr. Baumgartner. Duddingston, Clunie, and Forfar lochs. Hook. Scot. Canal near Drogheda. Mr. Murphy. E.)

♃ June—July.

POLYGYNIA.

ZOSTE'RA. *Spike-stalk* strap-shaped, concealed within a grass-like leaf, bearing the fructifications on one side. *Cal.* none: *Bloss.* none: *Stam.* alternate: *Caps.* alternate: *Seeds* solitary.

Z. **MARI'NA.** Capsules sessile: (leaves strap-shaped, long, flaccid. E.)

(*Hook. Fl Lond.* 35—*E. Bot.* 167. E.)—*Fl. Dan.* 15.

Stems much branched, (two or three feet long, radicating. E.) *Leaves* floating, long, grass-like, blunt, from *leaf-scales* sheathing, pointed. *Flowers* in a spadix, three or four inches long, on one side of the leaf near the base, which is at first covered with a transparent skin. Woodw. (Mr. Wilson communicates the following particulars respecting this obscure plant to Prof. Hooker. "I have found it, as you represent, occasionally monoecious, the anthers occupying the lower portion of the spadix. In one instance the spadix was entirely covered by sixteen pistils, placed two and two, and *some in a reversed position;* still the androgynous character is the most usual. I observed the impregnation to take place in contact with water, the anthers and stigmas being protruded beyond the folding edges of the sheath. The true or barren leaves appear to be essentially different from those bearing fructification; the former being sessile, with an entire sheathing base, closely surrounding the stem; while the fertile leaves are stalked. I therefore consider the latter as the spathæ, surmounted by bractea, resembling the proper leaves. E.)

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* In the autumn the plants sink to the bottom of the water, and in the spring from amongst the leaves of the old plants arise numerous thick suckers, each bearing a young plant, which floats on the surface, where it grows to maturity. Sometimes eight or ten form a circle on the surface, to which the strings are radii, and the old plant at the bottom the centre, and in this manner they frequently entirely fill up ditches, to the exclusion of all other herbage. I should suppose the parent plant decays, as the floating plants shoot out fibres, which, if they do not sooner, on sinking probably lay hold of the mud, and these, I apprehend, produce the fresh offspring. If such be its mode of growth, it is an example of a biennial of a very singular nature. Woodward. A great variety of insects are nourished by this plant; some of them pursue it down to the bottom of the water, and devour the leaves. Swine eat it. Goats refuse it. (As a curious, if not beautiful, vegetable, it is worthy of propagation. E.)

COMMON GRASS-WRACK. (Welsh: *Ysnoden las-werdd y môr, gwellt y gamlas.* E.) On the sea-shores, almost every where, and in adjacent salt water ditches. P. June—Aug.*

(The real *Z. oceanica*, admitted into our former Editions on the authority of Ray, as having been observed about the Isle of Mersey, and at Gatham Haven, Portsea, was never found growing on the British shores. E.)

A'RUM. (*Sheath* one leaf, convolute at the base: *Fruit-stalk* naked above, bearing germens below, and sessile stamens in the middle: *Perianth* none. E.)

A. MACULA'TUM. Stemless: leaves halberd-shaped, entire: spike-stalk club-shaped.

[illegible] 1—(*E. Bot.* 1298. E.)—*Riv. Mon.* 124. 1; *Arum—Mill Ill.*—[illegible] 228—[illegible] 505—*Woodv.* 25—*Bull.*—*Fuchs.* 69—*J. B.* ii. [illegible]—*Dod.* [illegible] *Lob. Obs.* 325. 2, *and Ic.* i. 597. 2—*Ger. Em.* 834. 1 [illegible] 1—*Lonic.* i. 200. 1—*Trag.* 774—*Matth.* 596—[illegible] 1. 2

[illegible] *Plant* glabrous. E.) *Spike-stalk*, or *spadix*, the upper [illegible], sometimes buff coloured, or mottled with buff and purple. *Germens* greenish yellow, the upper terminating in a hair-like or awl-shaped [illegible] or summit, purple at the end. *Anthers* with two open cells. *Nectaries*, the row above the stamens, exactly similar to the upper germens. *Leaves* large, glossy, generally spotted with black, and sometimes

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* Thrown on the shore by the tide, in great plenty, and mounds or walls are built with it to oppose the encroachment of the sea. Exposure to the weather bleaches it white. Buildings are thatched with the green leaves, which will endure upwards of a century. It is used by the inhabitants of Gothland, in Sweden, as a manure, and also for stuffing beds, in preference to hay, as being softer. (Much has been imported for such purposes, but the Highland Society now encourage the collecting of it on our own shores. E.) Horses and swine eat it. Cows are not fond of it. (The minute *Conferva zostericola*, Fl. Dan. 1599. 1. is a parasite of this plant: also *Ulva plantaginea*, Gray; and *Berkeleya fragilis*, Grev. Scot. Crypt. 294; "Of a reddish-brown colour, roundish form, consisting of a gelatinous mass or receptacle, less than half an inch in diameter, and a number of filaments which spring from its surface, and contain fusiform granules." And still more worthy of attention, *Exilaria flabellata*, most elegantly illustrated in Grev. Scot. Crypt. 289, and thus described:—"Branched, elongated, the branches hyaline, alternate, spreading." Investing the leaves of *Zostera* for several inches together, when dry shining with metallic lustre. Stem erect, one-third of an inch in length, branched, pellucid, colourless. Branches terminated by fan-shaped expansions, composed of wedge-shaped, hyaline, yellow bodies, very deciduous." E.)

S. **ALOI'DES.** Leaves triangular-sword-shaped: edge serrate with prickles.

(*E. Bot.* 379. E.)—*Fl. Dan.* 337—*Mill. Ill.*—*Bergen de Aloide at p.* 1—*Dod.* 589. 1—*Lob. Obs.* 204. 1, *and Ic.* i. 375. 2—*Ger. Em.* 825—*Ger.* 677—*Park.* 1249. 1—*J. B.* iii. 787. 1—*Pet.* 71. 5.

(A stonoliferous aquatic, with numerous radical *leaves*, six to nine inches long, resembling those of an aloe. *Flower-stalk* solitary, shorter than the leaves, single-flowered. *Flower* white, large. *Stamens* and *Pistils* generally in the same flower, but they have been observed on different plants; and where they are found in the same flower, the anthers are barren. Linn. (Smith explains that such plants are not to be considered dioecious, but rather as exhibiting casual imperfections, the anthers in one flower, the stigmas in another, not unfrequent in plants that increase much by root. E.)

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P. June—July.*

POLYGYNIA.

ZOSTE'RA. *Spike-stalk* strap-shaped, concealed within a grass-like leaf, bearing the fructifications on one side. *Cal.* none: *Bloss.* none: *Stam.* alternate: *Caps.* alternate: *Seeds* solitary.

Z. **MARI'NA.** Capsules sessile: (leaves strap-shaped, long, flaccid. E.)

(*Hook. Fl Lond.* 35—*E. Bot.* 467. E.)—*Fl. Dan.* 15.

Stems much branched, (two or three feet long, radicating. E.) *Leaves* floating, long, grass-like, blunt, from *leaf-scales* sheathing, pointed. *Flowers* in a spadix, three or four inches long, on one side of the leaf near the base, which is at first covered with a transparent skin. Woodw. (Mr. Wilson communicates the following particulars respecting this obscure plant to Prof. Hooker. "I have found it, as you represent, occasionally monoecious, the anthers occupying the lower portion of the spadix. In one instance the spadix was entirely covered by sixteen pistils, placed two and two, and *some in a reversed position;* still the androgynous character is the most usual. I observed the impregnation to take place in contact with water, the anthers and stigmas being protruded beyond the folding edges of the sheath. The true or barren leaves appear to be essentially different from those bearing fructification; the former being sessile, with an entire sheathing base, closely surrounding the stem; while the fertile leaves are stalked. I therefore consider the latter as true spathæ, surmounted by bractea, resembling the proper leaves. E.)

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(The real *Z. oceanica,* admitted into our former Editions on the authority of Ray, as having been observed about the Isle of Mersey, and at Gatham Haven, Portsea, is never found growing on the British shores. E.)

A'RUM. (*Sheath* one leaf, convolute at the base: *Fruit-stalk* naked above, bearing germens below, and sessile stamens in the middle: *Perianth* none. E.)

A. MACULA'TUM. Stemless: leaves halberd-shaped, entire: spike-stalk club-shaped.

Curt. 114—(*F. Bot.* 1298. E.)—*Riv. Mon.* 124. 1; *Arum*—*Mill Ill.*—*Bl*[illegible]. [illegible]—*Fl. Dan.* 505—*Woodv.* 25—*Bull.*—*Fuchs.* 69—*J. B.* ii. 784—[illegible]—*Lob. Obs.* 325. 2, *and Ic.* i. 597. 2—*Ger. Em.* 834. 1—*H. Ox.* [illegible] row 3. 1—*Lonic.* i. 200. 1—*Trag.* 774—*Matth.* 596—*Park.* [illegible]. 1. 2.

(*Root* tuberous. *Plant* glabrous. E.) *Spike-stalk*, or *spadix*, the upper part purple, sometimes buff coloured, or mottled with buff and purple. *Germens* greenish yellow, the upper terminating in a hair-like or awl-shaped style or summit, purple at the end. *Anthers* with two open cells. *Nectaries*, the row above the stamens exactly similar to the upper germens. *Leaves* large, glossy, generally spotted with black, and sometimes streaked with white. *Sheath* conical; large, pale green. *Berries* red, growing in a naked cluster.

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preading. Investing the leaves of *Zostera* for several inches together, when dry hining with metallic lustre. Stem erect, one-third of an inch in length, branched, pellucid, colourless. Branches terminated by fan-shaped expansions, composed of wedge-haped, hyaline, yellow bodies, very deciduous." E.)

WAKE ROBIN. CUCKOO-PINT. (COWS AND CALVES: LORDS AND LADIES: with other fanciful names. Irish: *Clovas a Gachir*. Welsh: *Calar gethlydd; Pidyn y gog*. E.) Shady places, ditch-banks and rough grounds, (both in England and Scotland, though not so frequent in the latter. Woods at Dalhousie. Maughan. Grev. Edin. E.) P. May.*

ANEMO'NE.† *Cal.* generally none: *Petals* five to ten, imbricated: *Capsules* many, with awns or tails formed by the permanent styles.

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* (The scarlet berries about the close of summer render the hedge-banks gay, when flowers are no more, and their own foliage has long disappeared. E.) The root and the leaves, when recent, are so extremely pungent, that it is highly disagreeable to taste them. The root has been employed in medicine as a stimulant, but when reduced to powder it loses much of its acrimony, and there is reason to suppose that the compound powder, which takes its name from this plant, owes its virtues chiefly to other ingredients. Dried and powdered, it is used by the French as a lotion, and is sold at a high price, under the name of Cypress Powder. It is undoubtedly a good and innocent cosmetic.—After the acrimony of the roots has been extracted, either by boiling or baking, they afford a very mild and wholesome farinaceous nutriment, resembling Salep. Many nations prepare the only bread they have from plants as acrimonious as this; first dissipating the noxious qualities by heat.

(Wedelius conjectures that the plant named *Chara*, on which, mixed with milk and made into a sort of bread, Cæsar's soldiers were subsisted at Dyrrachium during a scarcity of provisions, was either this species of *Arum*, or one much resembling it, which seems not improbable from the nutritive and farinaceous qualities of the root. Vid. *Orobus tuberosus*. Formerly Cuckoo-pint was well known by the name of *Starch-wort*, a pure and white starch being obtained from it. Dioscorides reports that the leaves may also be eaten, after being dried and boiled. Gerard asserts a curious fact from Aristotle, Ælimus, and other ancient authorities—that "Beares after they have lien in their dens forty daies without any maner of sustenance, (but what they got with licking and sucking their owne feete), as soone as they come forth, eate the herbe Cuckow-pint:" which seems to prove a sure restorative.—In severe snowy winters, according to the observations of Mr. White, the roots are scratched out of the dry banks of hedges and eaten by thrushes. Its economical uses appear to be well known abroad. In France it bears the name of *Chou Poivre*, (Pepper Cabbage), and *Pain de Lièvre*, (Hare's Bread), as though eaten by those animals. —In a recent and acrimonious state its virtues as a carminative and stomachic may be such as described by old authors, but its power is soon lost by drying.—As a stimulant, producing copious perspiration, it has been recommended in rheumatic pains. For medicinal purposes the roots should be gathered after the leaves decay, and not, as is too commonly practised, when the plant is in full foliage; which error may have greatly tended to bring its virtues into disrepute. It has been latterly much used in England as a substitute for the *Maranta*, or Indian Arrow-root, and is frequently sold in the shops as the genuine article. In Portland Island, where the *Arum* flourishes abundantly even upon the stubble lands, Mr. Griffith observed a number of women engaged in digging up the roots for this purpose for the supply of the London dealers, which they stated to be their regular employment.—Repeated washing, or soaking in fresh water many hours, is said to dissipate the pernicious quality. At Weymouth many cwts. are sold annually for starch, or as nourishment for young children and invalids; and also used in pastry, puddings, &c. From the Flat Holmes might be collected a sufficient quantity to be worthy the attention of Bristol market. In some parts of Worcestershire it is designated *Bloody-men's-fingers*, and some commentators have imagined it to be the *Long-purples* of Shakspeare, rather than *Orchis mascula*, which see, though with less probability. The flower of this plant has been cited as affording a remarkable instance of the spontaneous heat generated in vegetables; which, according to the observations of Lamarck and Senebier, is evolved in a very obvious degree, for several hours subsequent to the first opening of the spatha. Dr. Swediaur recommends the powdered root in dyspepsia, headaches, and intermittent fevers, in doses of gr. x. xx. or xxx. E.)

† (From 'Ανεμος, the wind; being readily agitated, or its petals easily scattered, as

A. **PULSATIL'LA.** (Flower solitary, nearly upright: involucrum in deep linear segments: petals six, erect: seeds with feathery tails: leaves doubly pinnate, cut, with linear lobes. Sm. E.)

(*Hook. Fl. Lond.—Ludw.* 119. E.)—*E. Bot.* 51—*Fl. Dan.* 153—*Relh. at p.* 208—*Matth.* 620—*Clus.* i. 246. 1—*Dod.* 433. 1—*Lob. Obs.* 149. 2, *and Ic.* i. 281. 2—*Ger. Em.* 385. 1—*Park.* 341. 2—*Kniph.* 1—*H. Ox.* iv. 26. *row* 1. 1—*Pet.* 40. 9—*Ger.* 308. 1 *and* 2, *and* 309—*Lonic.* i. 83. 2—*J. B.* iii. 409. 2 *and* 3.

Bloss. pendulous. *Petals* violet-coloured, (spear-shaped, downy outside. All the *leaves* from the root hairy. *Root* rather woody. *Stem* six or eight inches high, downy. In reducing *A. pratensis* of Sibthorp to this species, we submit to the authority of Dr. Williams, Professor of Botany at Oxford, and follow the example of Smith, Relhan, &c. Indeed the difference in the size of the flower, and the petals being reflexed instead of straight, is scarcely sufficient to constitute even a permanent variety. E.)

PASQUE FLOWER. (*A. pratensis.* Sibth. With. Ed. 4, but not of Linn. E.) High pastures, Gogmagog Hills, Hildersham, Bartlow, Cambridgeshire. Bernack Heath, near Stainford; Leadstone Hall, above a lake in a place called the Close, near Pontefract; Cornbury Park, near Charlbury, Oxfordshire. Tulip Hills, near Lexham, Norfolk. Mr. Pitchford. Canham Heath, near Bury; and Devil's Ditch, Newmarket. Mr. Woodward. Above Sir J. Paul's, Rodborough, Gloucestershire, common. Mr. Baker. P. April—May.*

A. **NEMORO'SA.** (Flower solitary: petals six, elliptical: seeds pointed, without tails: involucrum of three ternate or quinate, stalked, lobed and cut, leaves. Sm. E.)

(*E. Bot.* 355. E.)—*Curt.—Kniph.* 1—*Fl. Dan.* 549—*Fuchs.* 161—*J. B.* iii. 412. 2—*Lonic.* i. 163. 4—*Trag.* 95. 1. 1—*Ger.* 306. 2—*Walc.—Clus.* i. 247. 1—*Dod.* 435. 2—*Lob. Obs.* 384. 2, *and Ic.* i. 673. 2—*Ger. Em.* 383. 2—*Park.* 325. 1—*H. Ox.* iv. 28. 10—*Pet.* 40. 9—*Ger.* 307. 3 *and* 4.

Petals three inner and three outer. Linn. *Plant* six to eight inches high, smooth, excepting the leaves. *Stem-leaves* doubly three-fold; *leafits* egg-spear-shaped, variously jagged or lobed; veins slightly hairy. *Petals* white, full half an inch long, the outer tinged with purple at the

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noticed in Ovid. Met.; and hence the poetical allusion of Sir W. Jones:

"Youth, like a thin *Anemone*, displays
His silken leaf, and in a morn decays."

Or for a more interesting origin we may cite the beautiful epitaph of Bion to Adonis:

"Αἲ αἲ τὰν Κυθέρειαν· Απωλετο καλος Ἄδωνις.
Δάκρυον ἁ Παφίη τόσσον ἐκχέει, ὅσσον Ἄδωνις
Αἷμα χέει· τὰ δὲ πάντα ποτὶ χθονὶ γίγνεται ἄνθη.
Αἷμα ῥόδον τίκτει, τὰ δὲ δάκρυα τὰν Ἀνεμώναν." E.)

* (Sometimes admitted into gardens. The leaves and flowers taken inwardly excite vomiting. Haller. Corrosive and rubifacient. The inspissated juice is recommended in amaurosis and paralysis; externally for ulcers, herpetic eruptions, &c. Swediaur. The juice of the petals stains paper green, and is used in some countries to colour the Paschal eggs, whence supposed the English name; or rather, according to Gerard, derived from the season of flowering, about Pasque time, or Easter. E.)—Goats and sheep eat it. Horses, cows, and swine refuse it.

base. Woodw. *Stem* and *fruit-stalk* purplish. *Flowers* rather drooping, blackish, sometimes double, or entirely of a purplish red colour, as Hutton certifies, about Keswick, and others have remarked in Devonshire. *Root* tuberous, horizontal. E.)

Wood Anemone. (Irish: *Nead Coilleah.* Welsh: *Frithogen y goedwig*; *Blodeuyn y gwynt.* E.) Woods, hedges, and hollow-ways, common.
P. April.*

A. ranunculoi'des. (Flowers mostly in pairs: petals five, (sometimes six), elliptical: seeds pointed, without tails: involucrum of three or five somewhat stalked, deeply cut, leaves. E.)

(*E. Bot.* 1484 E.)—*Fuchs.* 162—*Trag.* 95. 2—*Lonic.* i. 163. 5—*Kniph.* 1—*Ger.* 306. 1—*Fl. Dan.* 140—*Lob. Ic.* i. 674. 1—*Ger. Em.* 383. 1—*Park.* 325. 5.

Much resembling *A. nemorosa,* but *petals* yellow, alternately two on the outside, and two within. *Fruit-stalk* with two leafits, the latter of which is at the base. (*Leaves* few. *Involucrum* nearly sessile. E.)

The *stem* occasionally supports a single flower, and is flexuose towards the bottom, as represented in the fig. of Fuchsius and Fl. Dan.

Yellow Wood Anemone. Shady places and hedges, rare. Near King's

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* The flowers fold up in a curious manner, and bend downwards, against rain. The whole plant is acrid. Goats and sheep eat it, but it is apt to disorder the latter violently. Horses, cows, and swine refuse it. Linn.—(The recent flowers are poisonous, and the plant yields an acrid, volatile principle, so corrosive as to be used externally instead of Cantharides. It it is also serviceable in head-achs, tertian agues, and rheumatic gout. Swediaur. E.) This plant is sometimes found with yellow dots on the under surface of the leaves, in which state it is figured in Ray, 3. 1. at p. 128, and has been mistaken for a *Polypodium.* Some have supposed these dots the work of an insect, but without sufficient proof. Dr. Pulteney, in Linn. Tr. ii. p. 305, has rendered it probable that they are formed of a minute species of *Lycoperdon,* though as they may be discovered in their younger state under the outer cuticle of the leaf, it is not obvious how the seeds could be introduced. These plants are evidently in a diseased state, of a yellow green, and do not bear flowers. The leaf of *Betonica officinalis* is liable to be affected in the same manner: (also that of *Fragaria.* The roots afford a nidus for *Peziza tuberosa.* By garden culture the stamens become transformed into supernumerary petals, and thus it attracts the admiration of the florist more than when in its native shades it merely affects the "*simplex munditiis.*" The remarks of an elegant writer may be applied with peculiar propriety to this genuine primaveral production, fit emblem of virgin modesty." "The love of flowers seems a naturally implanted passion, without any alloy: but, perhaps, 'it is the early flowers of Spring that always bring with them the greatest degree of pleasure, and our affections seem immediately to expand at the sight of the first opening blossom, however humble its race may be. It is not intrinsic beauty, or splendour, that so charms us, for the fair maids of Spring cannot compete with the grander matrons of the advanced year; they would be unheeded, perhaps lost, in the rosy bowers of Summer and of Autumn: no, it is our first meeting with a long-lost friend, the reviving glow of a natural affection, that so warms us at this season: to maturity they give pleasure as a harbinger of the renewal of life, a signal of awakening nature, or of a higher promise: to youth, they are expanding being, opening years, hilarity, and joy. 'With Summer flowers we seem to live as with our neighbours, in harmony and good will; but Spring flowers are cherished as private friendships." Though the more splendid varieties of Anemonies or Wind-flowers are derived from exotic species, which beautifully enamel the meads of Greece, our native ornament of the lonely thicket cannot fail to engage a due degree of admiration,

"Where thickly strewed in woodland bowers
Anemonies their stars unfold." E.)

Langley, Herts, and Wrotham, Kent. Hudson. (Near Abbot's Langley. Mr. G. Anderson. Eng. Fl. E.) P. May.

A. apenni'na. Flower solitary: seeds pointed, without tails: leafits snipt: petals spear-shaped, numerous.

Curt.—(*E. Bot.* 1062. E.)—*Clus.* i. 254. 2—*Dod.* 434. 2.

(In foliage resembling *A. nemorosa,* but rather more hairy. *Petals* bright blue; sometimes elliptical, twelve to sixteen. E.)

Blue Mountain Anemone. Woods and shady places, rare. Wimbledon Wood. Mr. Rand. Near Harrow on the Hill. Mr. Du Bois. Luton Hoe, Bedfordshire. Mr. Knowlton. Dill. Near Berkhamstead, Herts. Mr. Goodall. (These are, it must be acknowledged, somewhat suspicious stations. It is of very general occurrence in Italy, but not even found in Switzerland. E.) P. April.*

CLEM'ATIS.† *Cal.* none: *Petals* four, rarely five or six, valvular, or revolute at the edges: *Styles* permanent: *Seeds* numerous, caudate: *Receptacle* capitate.

C. vital'ba. Leaves winged: leafits heart-shaped: stem climbing.

(*E. Bot.* 612. E.)—*Curt.* 244—*Jacq. Austr.* 308—*Fuchs.* 97—*Trag.* 818—*J. B.* ii. 125. 1—*Lonic.* 1. 210. 1—*Pet.* 40. 12—*Matth.* 957—*Clus.* i. 122. 2—*Dod.* 404. 1—*Lob. Obs.* 345. 2, *and Ic.* i. 626. 1—*Ger. Em.* 886. 1—*Ger.* 739. 1—*Park.* 383. 1—*J. B.* ii. 125. 2—*Pet.* 40. 11.

Stem extending ten to twenty feet, striated, woody. *Leaves* opposite, on leaf-stalks; as are the *leafits.* The *leaf-stalks* twine about whatever they can lay hold of, and thus support the plant. *Fruit-stalks* branched; with triple divisions, woolly, from the bosom of the leaves. (*Panicles* forked, downy, bearing numerous sweet-scented flowers. E.) *Petals* green on the outside, cream-coloured within, thick, reflexed, scored, woolly. *Styles* becoming very long, slender, crooked, and covered with fine silky hairs; (forming elegant pensile tufts, which towards autumn repose on the hedges in profuse masses, enlivening the road-side after flowers have vanished. E.)

Traveller's Joy. Virgin's Bower.‡ Hedges and shady places, especially in calcareous soil, (thriving even amidst rocks and loose stones. E.) Common in the southern and western counties, but I have not observed it north of Worcestershire. (The elegant profusion with which it ascends lofty trees, and even rocks, on the southern shore of the Isle of Wight, must excite the admiration of every traveller. On the Ballast Hills at St. Anthony's and Willington Quay, Northumberland. Winch

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* (This is at least as worthy of the florist's attention as some other species. Its elegant blue flowers will prove ornamental to the shrubbery or wilderness. E.)

† (From κλεμα, κληματος, a vine twig, or tendril; from its climbing or clasping propensity. E.)

‡ (Thus named by Gerard in 1597. "*Trauellers Joie,* as decking and adorning waies and hedges, where people travell: *Virgin's Bower,* by reason of the goodly shadowe which they make with their thick bushing and climing: as also for the beautie of the flowers, and the pleasant scent or savour of the same:" and, by country people, *Old Man's Beard,* from the hoary appearance of the silky, elongated styles. The trivial name from *Vitis alba,* white vine. E.)

Guide; (but almost equally improbable that these plants should grow truly wild there, as in Scotland. E.) S. July—Aug.*

THALICTRUM. *Cal.* none: *Petals* four or five: *Capsules* many, rather beaked, (but ecaudate. E.)

T. **ALPI'NUM.** Stem unbranched, almost naked: bunch simple, terminal.

Fl. Dan. 11—*Lightf.* 13. 1, *at p.* 266—*E. Bot.* 262—*Pet.* 71. 72—*H. Ox.* ix. 20. 14—*Boerh. Ind. Alt. p.* 44.

A delicate little plant, scarcely a span high. *Petals* four, whitish, acute. *Flowers* on crooked fruit-stalks. *Root-leaves* compound, on long leaf-stalks. (*Leafits* roundish, crenate or lobed, dark-green, and shining above. E.) *Stem* in very luxuriant specimens with one nearly sessile leaf. *Stamens* about twelve, and *Pistils* eight, but variable.

ALPINE RUE-WEED. Moist rocks and on the sides of alpine rivulets in Scotland and Wales. On Ben Lomond. Dr. Hope. (On Malghyrdy, Ben Teskerney, and Craig Cailleach. Mr. Brown. Cronkley Fell, Durham. Mr. Robson. E.) P. June.†

T. **FLA'VUM.** Stem furrowed, leafy: leafits acute, trifid: panicle much branched, upright, compact: flowers erect.

(*E. Bot.* 367. E.)—*Kniph.* 5—*Fl. Dan.* 939—*Morris Umb.* 12. 2—*H. Ox.* ix. 20. *row* 2. 1—*Lob. Obs.* 508. 3. *and Ic.* ii. 56. 1—*Park.* 264. 1—*Pet.* 71. 9—*Ger.* 1067. 1—*J. B.* iii. 486.

Root yellow. *Petals* four, cream-coloured. *Stamens* twenty-four. *Pistils* ten to sixteen. *Leafits*, the *lower* irregular, sometimes wedge-shaped, with three clefts; or oval, entire, with a lobe on one side; the upper spear-shaped, entire, or with three clefts. Woodw. (*Stems* three feet high, upright, angular, little branched, panicled at the head, with very numerous flowers. *Stigmas* heart-shaped, short. *Seeds* few, furrowed. E.)

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* (Astringent, corrosive and diuretic. An infusion has been recommended in dropsy. Swediaur. The branches are sufficiently tough to make withs for faggots, for which purpose it is always used in the woods where it can be procured. Besides the claspers with which it is furnished, the very leaves have a tendency to twine around plants. The hairy plumes growing in clusters exhibit in winter a singular and beautiful appearance over the tops of bushes, hedges, &c. It is particularly well adapted for covering arbours and bowers in pleasure grounds, being of rapid growth and hardy. "The tubes, lymph-ducts, and air-vessels of this plant, (represented in Pl. iv. f. 2.) appear in a common magnifier beautifully arranged, being large, and admitting the air freely to circulate through them. Our village boys avail themselves of this circumstance, cut off a long joint from a dry branch, light it, and use it as their seniors do the tobacco pipe; hence they call it *Smoke-wood.* The pores are well seen by drawing some bright-coloured liquor into them." Journ. Nat. p. 110. The long feathery down attached to the seed may often be found at the entrance of holes made by mice; probably dragged there as a valuable material for their nests; as may be the seeds themselves, (though small, abundant), no unimportant accession to the winter store; where

——— "Sæpe exiguus mus
Sub terris posuitque domos atque horrea fecit." Virg. Georg. i. 181.

——— "Often the little mouse
Illudes our hopes; and safely lodged below
Hath formed his granaries."

In France common beggars, to excite compassion, produce ulcers by applying the juice to the skin; and the twigs are there used to make bee-hives, baskets, &c., possibly in a warmer climate growing even larger and stronger than with us. E.)

† (This plant is subject to a minute parasite, which, under the microscope, appears beautiful and interesting; *Æcidium Thalictri* of Grev. Scot. Crypt. 4; "growing on the under surface of the leaf in clusters of a roundish form; peridia oblong-cylindrical, bright orange; the mouth paler, and bursting irregularly." E.)

Var. 2. Lobes of the leaves narrower, and more wrinkled. Lightf.

H. Ox. ix. 20. 3.

Meadow Rue-weed. (Welsh: *Arianllys cyffredin; Troed y barcud.* E.) Moist meadows, pastures, and banks of rivers. P. June.*

T. mi'nus. (Leaves triply winged: leafits trifid, glaucous: panicle spreading, pendulous: stem flexuose or zigzag, divaricate. E.)

Jacq. Austr. 419—*Fl. Dan.* 732—*Kniph.* 5—*E. Bot.* 11—*Dod.* 58. 2—*Lob. Obs.* 508. 2. *and Ic.* ii. 56. 2—*Ger. Em.* 1251. 2—*Park.* 264. 5—*H. Ox.* ix. 20. 12—*Pet.* 71. 10—*Ger.* 1067. 2—*J. B.* iii. 487. 3—*Pet.* 71. 11.

Leafits broad and blunt, or wedge-shaped, varying greatly in size and shape. *Panicle* branched, *flowers few*, scattered, at first nutant, afterwards upright. Woodw. (*Stem* nearly upright, about a foot high, crooked, furrowed, leafy. *Lower-leaves* large, spreading. *Petals* four, elliptic, glaucous-purple. *Seeds* furrowed: Fl. Brit. acuminate at each end. De Cand. E.)

Lesser Rue-weed. (Welsh: *Arianllys bychan.* E.) Moist mountainous meadows in a calcareous soil. About Newmarket; Linton, and borders of Gogmagog Hills, Cambridgeshire, and Mountains in Malham and Settle, Yorkshire. Ray. Cheddar Cliffs, Somersetshire. Dr. Ford. Gloddaeth, Carnarvonshire. Pennant. Marham, Norfolk. Mr. Crowe. Skirreth Wood, near Ingleton, and about Kilnsay, Yorkshire. Curtis. Links of Montrose, also between Caroline Park and Cramond, near Edinburgh. Mr. Brown. (About Queen's Ferry. Mr. Winch. Above the beach at Red-wharf, &c. Anglesey. Welsh Bot. E.) P. July—Aug.

T. ma'jus. Leaves with many divisions: leafits ternate, glaucous beneath: flowers pendulous: flowering branches axillary, to or three together: (stipulæ crescent-shaped, notched. Sm. E.)

Jacq. Austr. 420—(*E. Bot.* 611. E.)

(Smith observes that *Dod.* 58. *f.* 1. and *Ger. Em.* 1251. *f.* 1. rather represent this plant than *T. flavum.* E.)

Root perennial, throwing up one or two stems every year. *Stems* crooked, two or three feet high, cylindrical, scored, purplish green, leafy, panicled. *Branches* several from the same point, of different lengths. *Leafits* small, egg-shaped or roundish, two or three-cleft towards the end; rather glaucous above, quite so underneath. *Flowers* sweet, pendent. *Petals* four, purplish green. *Stamens* fifteen to twenty. *Anthers* yellow. *Pistils* four to seven. *Seeds* spear-shaped, furrowed, acute. Distinguished from *T. minus* by its always sending out two or three branches from the same knot on the stem or larger branches, and by the leafits being dark green above and glaucous underneath; whilst in *T. minus* the branches rise singly, and the leafits are of a lighter green above. This plant is also much more branched and one third taller. Jacq. *Roots* remarkably yellow. Anders.

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* A cataplasm, made of the leaves, has been known to give relief in sciatica. The root dyes wool yellow. Cows, horses, goats and sheep eat the plant. Swine are not fond of it. Linn. (Acrid and vesicatory. E.)

In the specimen now before me, which was sent by Mr. Robson of Darlington, the *leaves* are trebly winged, the *leafits* urn-shaped, three-cleft at the end; the *petals* four, purplish; the *stamens* fourteen to eighteen, the *anthers* yellow, the *pistils* from five to seven. (Twice or thrice as large as the former in all its parts: *leafits* often an inch broad. Prof. Hooker suspects he has observed intermediate specimens with *T. minus*. E.)

(GREATER RUE-WEED. *T. majus*. Crantz. Jacq. De Cand. Sm. E.) Discovered by Mr. E. Robson, about two miles from Darlington, in a dry exposed situation, among bushes at Baydales; frequently attaining the height of four or five feet. (In Holderness. Mr. Knowlton. About Skipton. Rev. W. Wood. Hedges near Egleston, Yorkshire, side of the Tees. Mr. Brunton. Gordale. Mr. S. Woods. Sides of rivulets about Salisbury. Dr. Maton. Banks of Ullswater. Mr. J. Woods, jun. In a ravine of the Screes, near Wast Water. Mr. Wood. Bot. Guide. Gordale Scar, Yorkshire; near Barnard Castle, and woods at Nunnery, by the Eden, Cumberland. Mr. Winch. Banks of Loch Tay and Loch Rannoch. Mr. Anderson. E.) P. June—July.

ADO'NIS.* *Cal.* five leaves: *petals* five or more: *nect.* none: *seeds* naked.

A. AUTUMNA'LIS. Petals about eight, emarginate: fruit egg-cylindrical.

Curt. 135—*Kniph.* 5—*Clus.* i. 336. 1—*Dod.* 260. 3—*E. Bot.* 308—*Lob. Obs.* 150, *Ic.* i. 283. 2—*Ger. Em.* 387—*Ger.* 310. 1—*Park.*—*Par.* 291. 5.

Seeds covered with a thick permanent coat, not opening like a capsule, so that they may be considered as naked. The shape of the *fruit* applies to the whole mass of seeds upon the fruit-stalk. Several *flowers* on a plant. *Petals* seven or eight; dark scarlet, almost black at the base, concave. (*Anthers* deep violet. *Leaves* triply-wing-cleft, segments strap-shaped. *Stem* upright, branched, scored, six to twelve inches high. E.)

ADONIS-FLOWER. RED MAITHES. AUTUMNAL PHEASANT'S-EYE. Corn-fields. In the counties round London. Curtis. (About Dublin. Dr. Wade. Corn-fields near the Observatory, Oxford. Sibthorp. Matterley Farm, Hampshire, also in corn-fields near Blandford; in Stour Paine-field, on the borders of the Camp Down. Pulteney. Occasionally about Glasgow. Hopkirk. E.) A. June—July.†

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* (From αδων, pleasing; as the youth beloved by Venus: or according to ancient mythology, named after that son of Cinyras, as the flower into which he was metamorphosed after the dire catastrophe so deeply lamented by the goddess:—

> "——— Where the blood was shed,
> A flower began to rear its purple head." Ovid.

Doubtless nurtured by the tears wept over the dead body. E.)

† Its beautiful scarlet blossoms have gained it admittance into gardens. (Both the French name "*Goute de sang*," and the more classical "ADONIS," may equally be traced to the sanguineous colour, and globose form of the flowers, especially in an unexpanded state; in the latter designation fabled to have sprung from the blood of that favourite:—

> "O fleur, si chère à Cythérée,
> Ta corolle fut, en naissant,
> Du sang *d'Adonis* colorée."

(*A. æstivalis* of With. Ed. 3. et seq.; not of Linn. (which is more properly a native of Italy,) proves to be only a starved variety of the above species. Curtis considered that the petals afforded no specific distinction, neither were the seasons discriminative; but rather considered these species to be one and the same, under different circumstances. E.)

RANUN'CULUS.* *Cal.* deciduous five, (or three-leaved:) *Petals* five, (rarely two, three, or eight), with a nectariferous scale or pore within the claw: *Styles* permanent: *Seeds* numerous, incrusted.

(1) *Leaves undivided.*

R. FICA'RIA. Leaves heart-shaped, angular, smooth, on leaf-stalks: stem single-flowered: flowers with nine petals: calyx with three leaves.

(*Curt. N. E.*—*E. Bot.* 584. E.)—*Ludw.* 52—*Fl. Dan.* 499—*Curt.*—*Blackw.* 51—*Walc.*—*Kniph.* 1—*Fuchs.* 867—*J. B.* iii. 468—*Lonic.* i. 166. 1—*Dod.* 49—*Lob. Obs.* 323. 1, *and Ic.* i. 593. 2—*Ger. Em.* 816—*Park.* 617. 3—*Pet.* 38. 1—*Ger.* 669—*Matth.* 831—*Trag.* 613.

Root composed of oblong egg or club-shaped tubers. *Leaves* rather shining, sometimes spotted. *Calyx* leaves three or four. *Petals* eight or nine; bright yellow, (with an enamelled gloss. E.) Small egg-shaped germinating *bulbs* are sometimes found in the bosom of the leaf-stalks. (Nectariferous *scale* notched. Purt. *Stem* scarcely half a foot high, nearly upright, leafy, smooth. *Flowers* pedunculated, upright, solitary, (with age and exposure becoming white, the superficial enamel thus perishing. E.)

PILEWORT. LESSER CELANDINE. (Welsh: *Llygad ebrill*; *Bronwys.* E.) *Ficaria verna.* Huds. Meadows, pastures, and hedge-banks, common.
P. April.†

Or, perhaps, typical of his fatal rencontre with the wild boar, so feelingly deplored by his mistress:—

"Κεῖται καλὸς Ἄδωνις επ ὤρεσι, μηρὸν ὀδόντι
Λευκῷ λευκὸν ὀδόντι τυπεὶς, καὶ κύπριν ἀνιᾶ
Λεπτὸν ἀποψύχων."

*   *   *   *   *

*   *   *   *   *

"Ἄγριον ἄγριον ἕλκος ἔχει κατα μηρὸν Ἄδωνις·
Μεῖζον δ'ἁ Κυθέρεια φέρει ποτικάρδιον ἕλκος."

*   *   *   *   *

*   *   *   *   *

"Ἄνθεα δ' ἐξ ὀδύνας ἐρυθαίνεται· ἁ δὲ Κυθήρη
Πάντας ἀνὰ κνάμως καὶ ἀνὰ πτόλιν οἰκτρὸν ἀείδει."

*   *   *   *   *

*   *   *   *   *

"Βάλλε δ' ἐνὶ ϛεφάνοισι καὶ ἄνθεσι πάντασυν αυτῷ,
Ὡς τῆνος τέθνακε, καὶ ἄνθεα παντ' ἐμαράνθη." E.)

* (Diminutive of *rana*, a frog; though probably not thus appropriated from several species being found in marshy places, (the original of Dioscorides, R. *Asiaticus*, being an inhabitant of dry situations), but rather from the divisions of the leaves bearing an imaginary resemblance to the foot of that reptile. E.)

† The young leaves of Pilewort may be eaten in the spring along with other pot-herbs Goats and sheep eat it. Cows and horses refuse it. *Curculio dorsalis* is found upon it

R. FLAM'MULA. Leaves egg-spear-shaped, rather obtuse, on leaf-stalks: stem reclining, radicating.

Curt.—(*E. Bot.* 387. E.)—*Fl. Dan.* 575—*Dod.* 432. 1—*Lob. Obs.* 382. 2, *and Ic.* i. 670. 1—*Ger. Em.* 961. 2—*H. Ox.* iv. 29. 34—*Walc.* 5—*Park.* 1215. 2—*Ger.* 814. 2.

(*Root* composed of long simple fibres. *Stems* six to eighteen inches long, spreading, branched, leafy, cylindrical, smooth. *Flowers* terminal, solitary, pedunculated, upright, of a rich shining yellow. *Calyx* reflexed, nearly smooth. *Nectary* very small. *Seeds* smooth at the sides. Sm. E.) *Leaf-stalks* long, or rather a doubling of the leaves. *Leaves* more or less toothed or serrated. The plants with leaves serrated are represented in

Dod. 432. 2—*Lob. Obs.* 382. 3. *and Ic.* i. 670. 2—*Ger. Em.* 962. 3—*Pet.* 39. 6—*H. Ox.* iv. 29. 35—*J. B.* iii. 864. 3—*Ger.* 814. 3—*Park.* 1215. 3.

LESSER SPEAR-WORT. (Irish: *Laissar Lena.* Welsh: *Poethflam; Blaen*

(*Meloe proscarabæus* and *M. violaceus* likewise frequent the different species; and one or the other by some Entomologists have been represented as the formidable *Bupestris* of the ancients, so injurious to cattle; but this opinion needs confirmation; (also on this species and *R. acris*, will be found the parasitic fungus *Æcidium Ficariæ*, "crowded; capsule cylindrical, white, spreading; seeds bright orange." (Cultivated occasionally with a double blossom, but even in that state too prone to extend itself as a troublesome weed. In an age of ignorance and superstition, (certainly before Intellect had assumed the three-league boots), this plant obtained its more common English name from a supposititious virtue in curing hemorrhoids, merely deduced from the peculiar shape of its roots: of which, likewise, the Latin trivial (*Ficaria*, fig-like), is descriptive. Though unnoticed by the poets of old, the more observant moderns have condescended to sing the praises even of this unaspiring weed. As the welcome

"Herald * * *
Of a joyous train ensuing,"

Wordsworth has diffusely lauded the

"Little humble *Celandine.*"

And Charlotte Smith thus introduces it as engaging the attention of her adventurous butterfly:—

"Trusting the first warm day of spring,
When transient sunshine warms the sky,
Light on his yellow spotted wing
Comes forth the early butterfly.

With wavering flight he settles now
Where *Pilewort* spreads its blossoms fair,
Or on the grass where daisies blow,
Pausing, he rests his pinions there."

As in the fable of Adonis, Proserpine is said to have restored the favourite to life, on condition that he should spend six months with her, and the rest of the year with Venus, which implies the alternate return of Summer and Winter; so it is impossible not to believe that even the heathen mythologists, though as yet "seeing but through a glass darkly," in the habitual contemplation of such phenomena as the seeming death and revival of nature, were confirmed in the innate principle of the soul's existence after death:

"Shall I be left abandon'd in the dust,
When Fate, relenting, lets the flower revive?" Beattie.

And equally applicable to the like moral inference is the wonderful transmutation of the winged insect emerging from its sepulchral chrysalis. Indeed the Christian will therein behold a glimmering of that brighter light which was afterwards to be manifested;—a typical emblem of the more peculiar and momentous doctrine revealed in the Gospel. E.)

y gwaewlleiaf. Gaelic: *An lus-mor; Ghlaisleun.* E.) Bogs, boggy meadows and sides of rivulets. P. June—Sept.*

(*R. reptans* of Linn. Lightf. With. and other authors, even in the time of Lightfoot, was suspected to be only a variety of this species, and in that opinion more recent Botanists generally concur. It has been frequently observed in a series of gradations between the two; it is thus described by Mr. Woodward. *Leaves* one to four at each joint, upright. *Stem* slender, creeping. *Flowers* solitary, terminal, or at the joints; small, yellow. (*Leaves* very narrow, approaching to strap-shaped; whole plant diminutive, three to five inches in length; radicating from the joints. E.)

Dicks. H. S.—Kniph. 9—*Lightf.* 1, *frontispiece—Fl. Dan.* 108—*Amman.* 13. 1—*Fl. Lapp.* 3. 5.

Narrow-leaved Crowfoot. R. flammula δ. Hal. Scop. Sm. E.) Sides of lakes, (not unfrequent in the north of England. E.) West end of Loch Laver. Stony margin of Conniston Water, Lancashire. Mr. Woodward. In a field between an old intrenchment and the high road near Manchester race ground. Mr. Caley. (On the margins of Loch Tay. Mr. Brown. By Loch Leven, and Derwent-water. Mr. Winch. Margins of lakes in Anglesey. Welsh Bot. E.) P. July—Aug.

R. LIN'GUA. Leaves elongate lanceolate, somewhat serrated, nearly sessile: stem upright, (many flowered. E.)

(*Hook. Fl. Lond.* 171. E.)—*E. Bot.* 100—*Fl. Dan.* 755—*Ger.* 814. 1—*Ger. Em.* 961. 1—*Park.* 1215. 1—*H. Ox.* iv. 29. 33—*Pet.* 39. 5—*J. B.* iii. 865.

A much larger plant than *R. flammula. Leaves* in length equal to many times their breadth, ending in a long taper point, but in *R. flammula* they are in length only three or four times their breadth, and do not end in a long point. *Blossom* large, deep yellow. (*Stem* three or four feet high. *Calyx* hairy. *Plant* usually silky with appressed hairs; but the degree of hairiness seems to vary, and sometimes the leaves are entire. E.)

GREAT SPEARWORT, or CROWFOOT. (Welsh: *Blaen y gwaew mwyaf.* E.) Wet pastures and sides of lakes. Bogs on Iver Heath, near Uxbridge. Between Rotherhithe and Deptford. Bogs on Malvern Chase, Worcestershire. Mr. Ballard. Kineson Pool, near Stafford Dr. Stokes. Ditches about Restennet, Angus-shire. Mr. Brown. Sides of Ancot Pool, Salop. Mr. Aikin. (Crosby Marsh, near Liverpool. Dr. Bostock. In ditches at Preswick Carr, Northumberland. Mr. Winch. In a bog in the parish of Llangoed, Anglesey. Welsh Bot. Duddingston Loch, near Edinburgh. Parsons, in Lightf. E.) P. June—July.

R. GRAMIN'EUS. Leaves spear-strap-shaped, (many-ribbed, sessile: E.) stem upright, very smooth, few-flowered: root tuberous.

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* It is very acrid. Applied externally it inflames and blisters the skin, (as regularly practised in the Highlands and Islands of Jura, where the bruised leaves are applied in a limpet shell. E.) Horses eat it. Cows, sheep, goats, and swine refuse it. Its acrimony rises in distillation. Some years ago a man travelled through several parts of England administering emetics, which, like white vitriol, operated the instant they were swallowed. The distilled water of this plant was his medicine: and, from the experience I have had of it, I feel myself authorised to assert, that in the case of poison being swallowed, or other circumstances occurring, in which it is desirable to produce instantaneous vomiting, it is preferable to any other medicine yet known, and does not excite those painful contractions in the upper part of the stomach which white vitriol sometimes does, thereby defeating the intention for which it was given.

(*E. Bot.* 2306. E.)—*Bauh. Hist.* iii. 866. 3.

About a foot high. *Leaves* quite smooth, long and narrow like those of grasses. *Flowers* pale yellow, smaller than those of *R. lingua.* (*Calyx* perfectly smooth, lying open, but not reflexed.

Grassy Crowfoot. E.) Brought from North Wales, by Mr. Pritchard. P. May—June.

(2) *Leaves dissected and divided, not uniform.*

R. auri'comus. Root-leaves kidney-shaped, scollopped, cut: stem-leaves digitate, strap-shaped: stem many-flowered.

Curt.—(*E. Bot.* 624. E.)—*Fuchs.* 156—*Trag.* 97—*J. B.* iii. 857. 3—*Lonic.* i. 162. 2—*Kniph.* 2—*Fl. Dan.* 665—*Lob. Ic.* 669. 2—*Ger.* 954. 7—*Park.* 326. 7—*Pet.* 38. 2—*H. Ox.* iv. 28. 15—*Pet.* 38. 6—*Ger.* 807. 8.

Nectary a small oblique hole at the bottom of the petals not covered by any scale. Curt. *Blossoms* yellow, large. *Stem* about a foot high, leafy, slightly hairy on the upper part, slender. *Leaves* very slightly pubescent, the root-leaves on long leaf-stalks; the stem-leaves sessile. *Calyx* hairy, not reflexed, yellow. *Flowers* sometimes imperfect in the petals. Not acrid as are some of its congeners. E.)

Wood Crowfoot. Goldilocks. (Welsh; *Peneuraidd.* E.) Woods, groves, and hedges. P. April—May.

R. scelera'tus. (Stem hollow, branched: lower leaves palmate, the upper digitate: fruit oblong.

(*E. Bot.* 681. E.)—*Curt.*—*Fl. Dan.* 571—*Fuchs.* 159—*Trag.* 93—*J. B.* iii. 858. 1—*Lonic.* i. 163. 2—*Dod.* 426. 2—*Lob. Obs.* 382. 1, *and Ic.* i. 669. 1—*Ger. Em.* 962. 4—*Park.* 1215. 6—*Pet.* 38. 11—*H. Ox.* iv. 29. 27 *and* 28—*Matth.* 610.

Plant acrid, succulent, much branched, light-coloured. *Stem* smooth, thick, one to two feet high. *Leaves* smooth, with three or four deep divisions; segments spear-shaped, more or less jagged. *Flowers* small, yellow. *Flowers* numerous, pedunculated. *Fruit* egg-oblong, with very many seeds. E.)

Water, or Celery-leaved Crowfoot. (Irish: *Turkis fhain.* Welsh: *Crafange yr eryr.* E.) Shallow waters. A. May—June.*

R. a'cris. Calyx expanding: fruit-stalks cylindrical, not furrowed: leaves with three divisions, and many clefts; the uppermost strap-shaped, entire.

Curt.—(*E. Bot.* 652. E.)—*Woodv.* 246—*Walc.*—*J. B.* iii. 416—*Blackw.* 31. 2 *and E.*—*Dod.* 426. 1—*Lob. Obs.* 379. 2, *and Ic.* i. 665. 1—*Park.* 328. 2—*Pet.* 38. 3—*H. Ox.* iv. 28. 16.

Stem with hairs adpressed, (upright, two feet high, branching upwards. E.) *Calyx* hairy, coloured. *Leaves* hairy, segments black or deep purple at the points. *Stem-leaves* sessile, but sheathing the joints. *Leaf-stalks* hairy. *Blossom* yellow. (*Nectary* covered by a scale. Sm. *Fruit-stalks* occasionally flatted. Size and pubescence vary extremely; in sterile mountainous situations, single-flowered. E.)

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* The whole plant is very corrosive; and beggars use it to ulcerate their feet, which they expose in that state, to excite compassion.—(It has been used as a substitute for Cantharides, but the wounds prove more troublesome and difficult to heal. E.) Goats eat it. Cows, horses, and sheep refuse it.

(Frequently cultivated in gardens with double blossoms, (*Yellow Batchelors' Buttons,*) and found so in a wild state at Mill Green, near Ravensworth, by Mr. Winch. E.)

BUTTER CUPS. (UPRIGHT MEADOW CROWFOOT. (Irish: *Fearban.* Welsh: *Cafrange y frân sythboethus y gweunydd.* E.) Meadows and pastures, very common. P. June—July.*

(3) *Leaves dissected and divided; uniform.*

R. PARVIFLO'RUS. Seeds rough with tubercles ending in hooked points: leaves heart-shaped, hairy, lobed or toothed; upper ones three-lobed: stem prostrate.

E. Bot. 120—*Ray.* 12. 1. *at p.* 326—*H. Ox.* iv. 28. 21—*Pet.* 38. 9—*Pluk.* 55. 1.

Whole *plant* trailing close on the ground, (six or eight inches long. E.) *Root-leaves* on very long leaf-stalks, kidney, or heart-shaped, toothed. *Stem-leaves* kidney-shaped; upper ones sessile, simple or with three divisions; all the leaves extremely soft to the touch. *Flowers* small, yellow. (*Petals* narrow, sometimes partially wanting. E.) *Seeds* flatted; with minute hooked prickles on their sides.

SMALL-FLOWERED CROWFOOT. (Welsh: *Crafange y frân manflodeuog.* E.) Corn-fields and meadows, in a gravelly soil. Near Camberwell, and Greenstreet Green, near Dartford. Ray. Malvern Hill, Worcestershire. Mr. Ballard. Near Norwich. Mr. Pitchford. And Worcester. Dr. Stokes. St. Vincent's Rocks, Bristol. Rev. G. Swayne. (Bootle, near Liverpool. Dr. Bostock: and Crosby. Mr. Shepherd. Near Brockham, Surry, and Cockerton, Durham. Mr. Winch. Top of Oversley Hill, Warwickshire; and hedge banks near Alcester mill, on the Worcester road. Perry. In hedges bordering on Tywyn y Capel, near Holyhead, and at Aberffraw. Welsh Bot. E.) Lymington, Hants; and Lulworth Cove, Dorsetshire, plentiful. A. May—June.

R. HEDERA'CEUS. Leaves roundish, three to five-lobed, very entire: stem creeping.

Curt. 247—(*E. Bot.* 2003. E.)—*Fl. Dan.* 321—*J. B.* iii. 782. 2—*H. Ox.* iv. 29. 29—*Pet.* 38. 12.

Leaves shining, some-kidney-shaped, lobes nearly heart-shaped. *Leaf-stalks* flatted. *Fruit-stalks* not furrowed. *Petals* small, spear-shaped, white. *Stamens* five, six, seven, rarely more. *Nectaries* yellowish. *Seeds* wrinkled. (*Stems* prostrate, or floating on water; radicating. E.)

IVY-LEAVED CROWFOOT. (Welsh: *Crafange y frân eiddewddail.* E.) On the mud of slow shallow rivulets, and other watery places. P. June—Aug.

R. ALPES'TRIS. Leaves very smooth: root-leaves nearly heart-shaped, blunt, three-cloven, lobed; those of the stem spear-shaped, very entire: stem with one flower.

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* Sheep and goats eat it. Cows, horses, and swine refuse it. Linn. Cows and horses leave this plant untouched, though their pasture be ever so bare. (Such seems to be the case in general; but necessity will not always admit of choice, and we are also inclined to believe that the young shoots may be less acrimonious. E.) It is very acrid, and easily blisters the skin. (Curtis relates that even gathering the plant and carrying it some distance in the naked hand will produce a tendency to inflammation. E.)

Jacq. Austr. 110—*E. Bot.* 2390.

(*Plant* four or five inches high, erect, smooth in every part. *Leaves* chiefly radical, veined. *Flower* large. E.) *Petals* inversely heart-shaped, of a brilliant white. *Calyx* smooth, bordered with white. *Stem-leaf* often ternate; the radical ones greatly resemble those of *R. aquatilis* that float on the surface, and in watery places may be mistaken for them. Linn. Tr. vol. 10. p. 434.

ALPINE WHITE CROWFOOT. Discovered by the sides of little rills, and in other moist places about two or three rocks on the mountain of Clova, Angus-shire, very rare, and but seldom flowering, by Mr. Don, who suggests that its herbage, bearing a great resemblance to several of its kindred, may easily have been overlooked, but when in blossom it is truly an attractive plant. P. May. E.)

R. AQUAT'ILIS. (Stem floating, submersed: leaves hair-like; those above somewhat peltate, lobed, notched, with nearly central leaf-stalks. E.)

E. Bot. 101—*Pet.* 39. 1—*J. B.* iii. 781. 1—*Barr.* 565—*Dod.* 587. 2—*Lob. Obs.* 497. 2, *and Ic.* ii. 35. 2—*Ger. Em.* 829. 2—*Park.* 1216. 8—*H. Ox.* iv. 29. 31.

Flowers on fruit-stalks which arise from the same sheath with the leaves. *Petals* white, with a yellow spot at the base. *Nectary* a short open tube. (*Stems* cylindrical, leafy, lengthened branched out, according to the depth of water. *Plant* often covering the surface in extensive dense masses, with a profusion of flowers. E.)

Var. 2. *Large-flowered.* None of the leaves hair-like; flowers very large.

In a pool that had been a quarry, near Sodbury, Gloucestershire. Rev. G. Swayne.

Var. 3. *Circinatus.* All the leaves hair-like, forming a roundish line.

Pluk. 55. 2—*Pet.* 39. 3—*C. B. Pr.* 73. 2—*J. B.* iii. 784. 1—*Park.* 1257. 8.

Var. 4. *Diffusus.* All the leaves hair-like, segments spreading, outline irregular.

H. Ox. iv. 29. 32—*Ger.* 679—*J. B.* iii. 781. 2—*Pet.* 39. 2.

Var. 5. *Fluviatilis.* All the leaves hair-like; segments very long, parallel, taking the direction of the rapid stream, (and thus exhausted, rarely producing flowers. E.

Fl. Dan. 376—*J. B.* iii. 782. 1—*Lob. Ic.* i. 791. 1—*Ger. Em.* 827. 3—*Park.* 1256. 5—*Pet.* 39. 4.

WATER CROWFOOT. RAII. (Irish: *Niul uisge.* Welsh: *Crafrange y frân dyfrle.* Ponds, ditches, and rivers. P. May—July.*

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* This is a troublesome weed in ponds, but its flowers produce a beautiful effect when in such profusion as to cover the whole surface of the water. The varieties in the leaves seem entirely occasioned by the greater or less depth of the water, and by its being stagnant or not, and are therefore by no means constant. (Mr. Thomson remarks that in plants even not aquatics, but which happen to be planted in water, we may perceive the metamor-

R. **HIRSU'TUS.** (Root fibrous: stem hairy, many-flowered: calyx glandular, hairy, accuminate, at length reflexed: seeds tuberculated. E.)

Curt.—(*E. Bot.* 1504. E.)—*J. B.* iii. 417. 3.

Stem more branched and spreading; hairs stiffer and longer than in *R. bulbosus*. *Leaf-stalks* of the lower leaves hollow, and if cut asunder, the nerves appear projecting into the inside of the tube. *Leaves*, lobes three more distinct, the middle and outermost rounder and less deeply divided at the edges, the side ones with a portion as if cut out from the inner edge; frequently with irregular pale or whitish spots, and the upper surface beset with projecting points, from which the hairs arise. *Flowers* more numerous, smaller, and *seeds* smaller than in *R. bulbosus*. Curt. *Root*, fibres long, thick, white. *Root-leaves* either entire or three-lobed, the middle leafit on a leaf-stalk. *Flowers* pale yellow. Woodw. (Whole *plant* covered with spreading hairs; varying greatly in luxuriance; rather pale. E.)

(PALE HAIRY CROWFOOT. E.) Moist clayey places, where water has remained stagnant during the winter. Salt marshes near Gravesend. Ray. Various places about London; side of the road between Croydon and Mitcham; and plentifully by the sea side on the gravelly banks about Southampton. Curtis. Road sides, rubbish, &c.; Cambridgeshire. Relhan. Amongst corn in a clayey soil, and on new made banks of salt marshes, Yarmouth. Mr. Woodward. (Crosby, near Liverpool. Dr. Bostock. St. Anthon's Ballast Hills, Durham. Mr. Winch. Pentland Hills. Mr Arnott. Grev. Edin. Magilligan, Derry. Mr. Murphy. E.)
A. June—Sept.

(*R. parvulus* of Linn. and Fl. Brit. has been fully ascertained by Mr. D. Turner and Mr. Forster to be only a starved procumbent plant of *R. hirsutus*. E.)

R. **BULBOSUS.** Root bulbous: calyx reflexed: fruit-stalks furrowed: stem upright, many-flowered: leaves compound: (seeds smooth. E.)

(*E. Bot.* 515. E.)—*Mill. Ill.*—*Curt.*—*Kniph.* 7—*Walc.*—*Fl. Dan.* 551—*Dod.* 431. 1—*Lob. Obs.* 380. 3, *and Ic.* i. 667. 1—*Ger.* 953. 6—*Park.* 329. 5—*Pet.* 38. 4—*Fuchs.* 160—*J. B.* iii. 417. 4—*Ger.* 806. 6—*Matth.* 614.

Root globular, fibrous at the base. *Stems* a foot high, upright, bare at the base, towards the top leafy, and branched. Lyons. *Calyx* at the bottom thin and semi-transparent. *Stem* never throwing out suckers like *R. repens*. Curt. *Upper leaves*, divisions strap-shaped. *Bulb* formed above the bulb of the preceding year. When it comes into flower, the old one, in a dry soil, may be found in a state of decay under the new one, and surrounded by the fibres, but without the least appearance of suckers proceeding from either of them. In a turf containing six plants, the roots were all distinct, excepting one, which appeared from its size, to

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phose from the flat to the capillary leaves taking place in the fresh shoots before they gain the surface of the water, after which they assume the form consonant to the natural habit of the plant, as in Horehound, &c. E) So far is Water Crowfoot from possessing the deleterious qualities usually attributed to it, that Dr. Pulteney, in the fifth vol. of Linn. Tr. has given ample testimony to its capability of almost alone supporting horses, cows, and pigs, in good condition, and the animals eat it with avidity.

be a seedling, with the old bulbs at the bottom. (This state of the plant having occasioned some perplexity to a correspondent of the Mag. Nat. Hist. is represented by a figure in that work. vol. i. 380. E.) *Petals* golden yellow. Woodw. (*Plant* acrid. *Leaves* more or less hairy: lobes of the lower ones nearly egg-shaped; upper leaves in linear segments. E.) *Nectary* short, inversely heart-shaped; in *R. hirsutus,* it is oblong egg-shaped. This circumstance alone is sufficient to distinguish the two species.

(Var. 2. *Flore pleno.* Flower double. About Leamington and Warwick. Perry. E.)

Bulbous Crowfoot. Butter Cup. Gold Cup. (Welsh: *Chwys Mair; Blodau yr ymenyn.* E.) Meadows and pastures, (which are chiefly indebted to this plant for that brilliant golden hue which must attract the admiration of every beholder during Spring. E.) P. May.

R. re'pens. Calyx expanding: fruit-stalks furrowed: suckers creeping: leaves compound, (upper ones entire. E.)

Curt. 211—(*E. Bot.* 516. E.)—*Blackw.* 31. 1—*Fl. Dan.* 795—*Dod.* 425—*Lob. Obs.* 379. 1, *and Ic.* i. 664. 2—*Ger. Em.* 951. 1—*Pet.* 38. 7 *and* 8—*H. Ox.* iv. 28. 18—*Pet.* 38. 8—*Ger.* 804. 1.

The *stem* creeping and striking out roots from the joints, will always distinguish this from *R. bulbosus. Fruit-stalks* with five furrows, and one or two flowers. *Calyx* hairy, deciduous, not reflexed. *Blossom* of a deeper yellow than *R. acris.* (*Petals* notched. *Flowering-stems* erect, one to two feet high. E.)

Creeping Crowfoot or Butter Cups. (Welsh: *Crafange y fran ymlusgaidd.* E.) Meadows, pastures, on rubbish under hedges, and in gardens, in moist situations. P. June—Aug.

R. arven'sis. Seeds prickly: upper leaves doubly compound, strap-shaped: (stem erect, branched, many-flowered. E.)

Curt.—*E. Bot.* 135—*Kniph.* 12—*Walc.*—*Fl. Dan.* 219—*Fuchs.* 157—*J. B.* iii. 859. 1—*Dod.* 427. 2—*Lob. Obs.* 380. 1, *and Ic.* i. 665. 2—*Ger. Em.* 951. 3—*Park.* 328. 4—*H. Ox.* iv. 29. 23—*Pet.* 38. 10—*Ger.* 805. 3.

(*Stem* twelve to eighteen inches high, nearly smooth, upright, much branched, cylindrical. *Petals* inversely egg-shaped, narrow. E.) Whole *plant* pale, (but slightly hairy. E.) *Segments* of the upper leafits, strap-shaped. *Flowers* small, pale yellow. *Pericarps* (compressed, large. E.) more obviously muricate than those of *R. parviflorus. Seeds* and *flowers* on the same plants, at the same time.

Corn Crowfoot. Common in corn-fields. A. June.*

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* It has lately been said that cows, horses, and sheep, in Italy eat it greedily, though it is so acrid as to poison the latter. Three ounces of the juice killed a dog in four minutes. Its growing chiefly, if not solely, in corn-fields, where cattle are excluded, may possibly be the reason why we have not heard of mischief being done by it in this country. (Though several British species of *Ranunculus* are disposed to become double, and are sometimes observed so in a wild state; the more showy kinds, which display an endless variety of the richest colours in our gardens, are of Turkish and Persian origin. E.)

TROL'LIUS.* *Cal.* none: *Petals* about fourteen: *Capsules* many, egg-shaped, many-seeded: (*Nectary* compressed. E.)

T. EUROPÆ'US. Petals converging: nectaries five to ten, as long as the stamens.

Kniph. 4—*Fl. Dan.* 133—*E. Bot.* 28—*Clus.* i. 237. 1—*Dod.* 430. 1—*Lob. Obs.* 385. 1, *and Ic.* i. 675—*Ger. Em.* 955. 12—*Ger.* 809. 13—*J. B.* iii. 419—*H. Ox.* xii. 2. 2—*Matth.* 613—*Park. Par.* 219. 11.

(*Stem* upright, about eighteen inches high, cylindrical, smooth, branching upwards. *Seeds* black and shining. E.) *Blossoms* globose, yellow. *Nectaries* yellow, not longer than the stamens. *Leaves* round in their circumscription, divided to the base into five, segments very entire at the base, jagged upwards. *Capsules* ribbed transversely, terminated by a crooked horn, pointing outwards, giving the head a star-like appearance. Woodw.

GLOBE-FLOWER. GOWLANS. (*Lucken-Gowan*; i. e. CABBAGE DAISY, in Scotland. E.) Sides of mountains, and mountainous meadows in Wales and the North of England. Hudson. (Common in Scotland. Hooker. E.) Skirrith Wood, and moist woods about Settle, Yorkshire. Curtis. Near Troutbeck, Westmoreland. Mr. Woodward. At the road stile near Dale Park, in Furness Fells. Mr. Atkinson. Marshes in the county of Durham, common. Mr. Robson. (Meadows at Hays, Shropshire, plentifully. Waring. Boggy grassy lands to the left of the road from Dolgelle to Trawsfynaid, Merionethshire. Rev. J. Davies, in Bot. Guide. At the foot of the Black Cataract, near Moentwrog, North Wales. Miss Roberts. Near Buxton. Bree, in Purt. Woods on Derwentwater. Mr. Winch. Banks of the Water of Leith. Mr. Maughan. Hook. Scot. Banks of the Clyde at Bothwell; and the Falls. Hopkirk.' Aspatria Mill, Cumberland. Rev. J. Dodd. Banks of Winandermere. Mr. W. Christy. Convoy and Lough Gartan, Donegal. Mr. Murphy. E.)

P. May—June.†

HELLEB'ORUS.‡ *Bloss.* none: *Cal.* five leaves, often coloured: *Nectaries* bilabiate, tubular: *Caps.* like a legumen; many-seeded, rather upright, beaked.

H. VIR'IDIS. Stem many-flowered, leafy: leaves digitate: petals expanding.

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* (A name invented by Gesner, who thus latinized the German word *trôl*, spherical; descriptive of the globular form of the blossom. E.)

† It is cultivated in flower gardens; and in its double state makes a handsome appearance. The term *Lucken*, (meaning closed as a cabbage) applied to this kind of *Gowan*, may tend to reconcile the prevalent opinion, and to identify the *Globe-flower* with the one introduced in the garland presented by the young Laird to Edinburgh Katy; or we should have supposed the Marsh Marigold, (which see), of more general occurrence, to have answered the description sufficiently well;—

"We'll gae to some burn-side to play
And gather flowers to busk ye'r brow:
We'll pou the daisies on the green,
The *Lucken-Gowans* frae the bog." A. Ramsay. E.)

‡ (From ελειν, to destroy; and βορά, food for cattle; q. d. poisonous food. E.)

Jacq. Austr. 106—*Curt.*—*Blackw.* 509 *and* 510—*E. Bot.* 200—*Kniph.* 1—*Fuchs.* 274—*J. B.* iii. 636—*Clus.* i. 275. 1—*Dod.* 385. 2—*Lob. Obs.* 387. 2. *and Ic.* i. 680. 2—*Get. Em.* 976. 2—*Park.* 212. 2 *and* 3—*H. Ox.* xii. 4. 5—*Ger.* 825. 2—*Trag.* 405—*Lonic.* i. 171. 2—*Matth.* 1221.

Pistils three, sometimes four, rarely five. Crantz. *Segments* of the leaves deeply serrated, particularly upwards. *Flowers* mostly two; drooping, yellowish green, (as are the large calyx leaves. E.) *Root* fleshy, black, with many long fibres. *Stem* upright, a foot high, forked at the top, leafy, smooth. *Leaves* large, smooth, shining; root-leaves petiolate, stem-leaves sessile. Fl. Brit. E.)

GREEN-FLOWERED HELLEBORE. Woods and dry pastures in chalky soil. Bigwin Closes, Ditton, and Whitwell, Cambridgeshire. Arundel Castle, Sussex. Knowlton, E. Kent; and Stoken Church, Oxfordshire. Orchard near Mr. Ballard's, Robinson's End, Malvern Chase. Mr. Wells. Near Piersbridge, but scarce. Mr. Robson. (Near Harefield, Middlesex. Miss Jane Baynes. Fl. Brit. Kiddow Lane, between Leeds and Tadcaster; about Aberford. Rev. W. Wood. .Banks of the river opposite the mill, Knaresborough. Rev. J. Dalton. Bot. Guide. In the wood above Tollard Royal, Dorset. Dr. Pulteney. Hedge banks between the Dell and Longridge, Painswick. Mr. O. Roberts. Banks of the Tees, near Whorlton. Winch Guide. In the deep stony lane on the left hand, just before the turning to Norton farm, and at the top of Middle Dorton under the hedge, near Selborne. White's Nat. Hist. Dunglass glen. Dr. Parsons, in Lightf. Westfield wood, near Sandgate, Kent. Mr. Lee, in Sm. Obs. In a field near Studley Castle, Warwickshire. Purton. Between Rosmorran and Thenegie, Cornwall, near the brook. Dr. Forbes. E.) P. March—May.*

H. FŒT'IDUS. Stem many-flowered, leafy: leaves pedate: petals converging.

(*E. Bot.* 613. E)—*Woodv.* 19—*Kniph.* 12—*Blackw.* 57—*Fuchs.* 275—*J. B.* iii. 880—*Trag.* 251—*Dod.* 386—*Lob. Obs.* 387. 4, *and Ic.* i. 680. 1—*Ger. Em.* 976. 4—*Lob. Obs.* 387. 3. *and Ic.* i. 679. 2—*Ger. Em.* 976. 3—*Park.* 212. 3—*H. Ox.* xii. 4. 6—*Ger.* 826.

(*Plant* bushy, fetid, evergreen. E.) *Leaves* deep, lurid, green. *Branches, leaf-stalks, floral-leaves,* and *flowers* pale greenish yellow. *Stipulæ* at the divisions of the branches oval-spear-shaped, embracing the stem, solitary, with three deep clefts at the end tinged with purple. *Floral-leaf* oval-spear-shaped, entire, solitary, at the base of each fruit-stalk, tinged with purple. Woodw. *Flowers* numerous, panicled, drooping, globose, green, or tinged with purple at the edges. *Stem* about a yard high, pale, leafy. E.)

BEAR'S-FOOT. SETTERWORT. FETID HELLEBORE. (Irish: *Crub Mahuin; Dahow Duh.* Welsh: *Crafrange yr arth; Llewyg y llyngyr.* E.) Meadows, shady places, and hedges. Cherry-Hinton, Fulbourn, Triplow, Cambridgeshire. Downs near Chichester, Sussex. Woods

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* A violent cathartic not to be administered without caution; being nearly similar in effect to its congener, and on the Continent often adopted for that. The powdered leaves, used as snuff, are said to have cured several cases of nyctalopia, and to be worthy of trial in other diseases of the eyes. (These species will flourish under trees, and are ornamental in shady walks and shrubberies. E.)

between Congersbury and Backwell, Somersetshire. Bath Hills, near Bungay. Mr. Woodward: Woods in Tortworth Park; Gloucestershire. Mr. Baker. (Rockingham Forest, Northamptonshire common. Mr. Pitt. Lanes at Campsall, near Doncaster. Teesdale. Woods in Allondale, Northumberland. Mr. Winch. Bot. Guide. Side of Jack's Green, Shepscombe, Painswick. Mr. O. Roberts. Studley Castle, Dunnington and Arrow, Warwickshire. Purton. All over the High-wood and Coneycroft-hanger, near Selborne. White's Nat. Hist. Near Tyfry, Anglesey. Welsh Bot. Banks of the Clyde at Blantyre Priory. Hopkirk. E.)
P. Jan.—April.*

CALTHA.† *Calyx* none: *Petals* five: *Nectaries* none: *Capsules* several, many-seeded.

C. PALUS'TRIS. (Stem erect: leaves cordate, suborbicular, obtusely crenate. E.)

(*E. Bot.* 506. E.)—*Kniph.* 7—*Munt. Phyt.* 436. 122—*Curt.*—*Fl. Dan.* 668—*Matth.* 846—*Clus.* ii. 114. 1—*Dod.* 598. 1—*Lob. Obs.* 323. 2, *and Ic.* i. 594. 1—*Ger. Em.* 817. 1—*Trag.* 142—*J. B.* iii. 470—*Lonic.* i. 88. 3—*Park.* 1213. 1—*Ger.* 670. 2 *and* 1—*Walc.*

Leaves kidney-shaped, entire, sometimes veined and regularly toothed. *Petals* bright yellow, five to seven. *Stamens* in two rows, inner row with broad anthers, outer row twice as long, club-shaped, with the anthers compressed. (*Flowers* several, large, showy, pedunculate. E.) (*Stem* half a foot or more in height, but little branched, more or less upright, furrowed, smooth, stout, succulent.) *Blossoms* occasionally double, as represented in

Park. 1213. 2—*Clus.* ii. 114. 2—*Ger. Em.* 818. 3—*Ger.* 681. 3.

MARSH MARIGOLD. MEADOW-BOUT. (In Scotland, GOWANS.) (Irish: *Duilliur Spuinh.* Welsh: *Troed yr ebol; Gold, neu Rhuddos y gors.* Gaelic: *A'chorra-shod.* E.) Moist Meadows. Banks of rivers and pools, common.
P. April—May.‡

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* The dried leaves are frequently given to children to destroy worms, (and have been recommended in different species of mania. E.) but they must be used sparingly, being violent in their operation, and instances of their fatal effects are recorded. (The powdered roots mixed with meal destroy mice. E.) Country people put the root into setons made through the dewlaps of oxen, (with the expectation of drawing off or relieving by the discharge, murrain or any other disease of cattle, a very ancient practice, recorded by Absyrtus and Hierocles. E.) A decoction of one or two drachms operates as a drastic purgative. (Mr. Purton never could increase the dose of powdered leaves beyond ten grains without considerable disturbance in the intestinal canal, nor can the same quantity of the fresh-dried plant be exceeded with any degree of safety. Med. Fl. *H. niger* of the ancients, (described by Sibthorp in Fl. Græc. as *H. officinalis*, t. 523) according to Dioscorides, Pliny, and other authorities, appears to have possessed yet more powerful qualities, and was celebrated as an antimaniacal remedy. Experience may be too dearly purchased by trials of herbs so alarming in their effects as are even the British species of Hellebore, or it might be regretted that medical practitioners have acquired so little accurate knowledge of their virtues. The different species of Hellebore flourish under the shade of trees, and exhibit their singular blossoms during the most steril season. They are therefore acceptable in shrubberies, especially the *Christmas Rose*, supposed by some to be the real Black Hellebore of the ancients. E.)

† (From *calathus*, a little basket; which the expanded flower somewhat resembles. E.)

‡ The flowers gathered before they expand, and preserved in salted vinegar, are a good substitute for capers. The juice of the petals, boiled with a little alum, stains paper

(Var. 2. *Radicans.* Stem creeping; leaves triangular, heart-shaped, sharply crenate. *C. radicans.* Forst. Linn. Tr. vol. 8. t. 17. Sm. E. Bot. 2175. De Cand. *C. palustris β.* Hook. Grev. Found by Mr. G. Don, and Mr. Dickson, in Scotland; also by Mr. Winch on Helvellyn by the foot-path leading Stainwards, and on the shores of every lake in Cumberland: by Mr. J. Backhouse, on Egleston Fell, and in Raby Park, Durham. On examining numerous specimens we find some resembling Mr. Forster's, mixed with almost every gradation between them and the more common appearance of *C. palustris.* We observe leaves with entire or crenate edges even on the same plant, and also exhibiting the gradation from the heart or kidney, to the triangular shape. The stalk may be found creeping or upright, as the situation is moist or dry. So greatly do these plants vary in size, that the luxuriant picture by Curtis may be deemed equally correct, with the stunted and diminutive representations of Kniphofius or the Flora Danica. E.)

SAGITTA'RIA.* *Stamens* and *pistils* in different flowers on
the same plant: *Cal.* three leaves: *Bloss.* three petals.
B. *Filam.* about twenty-four.
F. (*Seeds* numerous, bordered. E.)

S. SAGITTIFO'LIA. Leaves arrow-shaped, acute.

E. Bot. 84—*Curt.* 61—*Fl. Dan.* 172—*Walc.* 5—*Dod.* 588. 2—*Lob. Obs.* 161. 2, *and Ic.* 1. 302. 1—*Ger. Em.* 416. 2—*Park.* 1247. 2—*J. B.* iii. 789—*Pet.* 13. 11.

(*Root* tuberous, with fibres. *Herb* milky, smooth. *Leaves* varying according to situation; when deeply immersed in water or exposed to a rapid current, diminish almost to nothing; hence several evanescent varieties, Sm. E.) *Stalks* with six edges. *Leaves* all from the root; the *first* which are always under water, long, strap-shaped, by some authors considered as a variety, and well figured in Fl. Dan. 172, and ill done in Pet. 13. 9, the *succeeding*, which rise above the water, arrow-shaped, very entire, smooth, with parallel ribs and reticulated veins. *Leaf-*

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yellow, but the colour so produced is reported not to be permanent. E.) The remarkable yellowness of butter in the spring has been supposed to be caused by this plant, (and with equal improbability by the Crowfoot, E.), but cows will not eat it, unless compelled by extreme hunger, and then, Boerhaave says, it occasions such an inflammation that they generally die. Upon May-day, country people strew the flowers before their doors, (and wreath them into garlands.—The Scots name *Gowlan* or *Gowan*, though indiscriminately applied to several spring flowers, is generally understood more particularly to designate the daisy, dandelion, crowfoot and meadow-bout, thus "gowany glens," has been interpreted "daisied dales;" and with like reference Burns

"We twa hae run about the braes,
And pu't the *Gowans* fine."

Goats and sheep eat this plant; horses, cows, and swine refuse it. Encyc. Brit. That the atmosphere, especially of a confined apartment, may be contaminated by the gaseous exhalations of plants and flowers, during the night often fatally mephitic, is unquestionable; and it would appear that even medicinal properties may be thus evolved, for on a large quantity of the flowers of Meadow bouts being put into the bed-room of a girl who had been subject to fits, the fits ceased. An infusion of the flowers were afterwards successfully used in various instances of children and adults.—Few plants will be found more ornamental on the margin of the pleasure-ground lake, wherein the rich golden blossoms are often reflected with admirable effect. The double-blossomed variety is admitted into gardens. E.)

* (From *sagitta*, an arrow, the leaves resembling the head of that missile. E.)

stalks tapering, convex underneath, concave above, covered by the water. *Flowers* three in a whorl. *Flower-scales* small, oval, spear-shaped, one at the base of each fruit-stalk, embracing the stem. *Fruit-stalks* of the barren flowers an inch long, of the fertile flowers about half an inch, and stronger. *Calyx* one leaf with three divisions. St. *Flowers* white with a purplish tinge at the claws of the petals, but so readily falling off that it is difficult to carry them home for examination.

Var. 2. *Smaller. Ger.* 337—*J. B.* iii. 790. 2—*Pet.* 43. 12.

On the Thames' shore, opposite Lambeth palace; and before the Earl of Peterborough's house, above the horse ferry, on Westminster side. R. Syn. The δ of Linnæus and β of Haller, are surely imaginary, for the strap-shaped leaves will always be found both before and after flowering. Woodw.

ARROW-HEAD. (Welsh: *Saethlys, saeth-ddeiliaidd.* E.) Ditches and margins of slow rivers. P. July.*

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* There is always a bulb at the lower part of the root, growing in the solid earth, beneath the mud. This bulb constitutes a considerable part of the food of the Chinese, and upon that account they cultivate it. (The North American Indians also roast the roots for food. Barton. E.) Horses, goats, and swine eat the plant; cows are not fond of it.

CLASS XIV.

DIDYNAMIA.

GYMNOSPERMIA.

(1) *Calyx mostly five-cleft, nearly regular.*

LEONU'RUS. *Anthers* sprinkled with hard granulations: (upper lip of the *blossom* shaggy. E.)

GLECHO'MA. *Anthers* in pairs, each pair forming a cross.

MEN'THA. *Filaments* expanding, straight: *Bloss.* nearly regular.

VERBE'NA. *Bloss.* nearly regular: upper segment of the calyx shorter.

TEU'CRIUM. *Bloss.* without any upper lip: upper segment of the petal divided.

A'JUGA. *Bloss.* upper lip shorter than the stamens, notched.

GALEOB'DOLON. *Bloss.* upper lip entire, vaulted: lower lip trifid: segments broad, acute: *Anthers* fleshy on the back.

BETON'ICA. *Bloss.* upper lip flat, ascending: *Tube* cylindrical: *Stam.* as long as the mouth of the tube.

LA'MIUM. *Bloss.* with a bristle-shaped tooth on each side the lower lip, (on each side the mouth.)

GALEOP'SIS. *Bloss.* with two teeth upon the lower lip.

STA'CHYS. *Bloss.* lateral segments of the lower lip reflexed: *Stamens* after flowering expanding to the sides.

NEP'ETA. *Bloss.* lower lip scolloped: *Mouth* with the edge reflexed.

BALLO'TA. *Calyx* with ten scores: *Bloss.* upper lip vaulted.

MARRU'BIUM. *Calyx* with ten scores: *Bloss.* upper lip linear, straight.

[Origanum. Thymus Nepeta.]

(2) *Calyx bilabiate.*

SCUTELLA'RIA. *Calyx* after flowering closed with a cover, and resembling a helmet.

THY'MUS. *Calyx* (mouth small;) closed with soft hairs.

PRUNEL'LA. *Filaments* forked, one of the points bearing the anther.

ORIG'ANUM. *Calyces* without ribs, forming an imbricated cone.

CLINOPO'DIUM. *Involucrum* many-bristled, inclosing the *calyces.*

MELIT'TIS. *Cup* wider than the tube of the blossom: *Upper lip* of the blossom flat, entire: *Anthers* crossing each other.

[Teucrium.]

ANGIOSPERMIA.

(1) *Calyx cloven, or two-leaved.*

ROBAN'CHE. *Caps.* one-celled: *Bloss.* nearly equal, quadrifid: a *gland* under the base of the germen.

(2) *Calyx four-cleft.*

LATHRÆ'A. *Caps.* one-celled: *Bloss.* gaping: a *gland* beneath the germen.

BART'SIA. *Caps.* two-celled: (*Seeds* angular: E.) *Bloss.* gaping.

EUPHRA'SIA. *Caps.* two-celled: *Bloss.* gaping: lower *anthers* spinous.

RHINAN'THUS. *Caps.* two-celled: *Calyx* compressed: *Bloss.* gaping.

MELAMPY'RUM. *Caps.* two-celled: *Bloss.* gaping: *Seeds* two, gibbous.

(3) *Calyx five-cleft.*

LIMOSEL'LA. *Caps.* (semi-orbicular, E.) one (or two) celled, many-seeded: *Bloss.* bell-shaped, regular.

SCROPHULA'RIA. *Caps.* two-celled: *Bloss.* reversed; the lip with an intermediate segment within.

SIBTHORP'IA. *Caps.* two-celled: *Bloss.* wheel-shaped: *Stam.* in pairs, converging.

DIGITA'LIS. *Caps.* two-celled: *Bloss.* (tubular) bell-shaped, gibbous on the under side: *Stam.* declining.

ANTIRRHI'NUM. *Caps.* two-celled: *Bloss.* gaping, closed by a palate, with a more or less projecting nectary beneath.

PEDICULA'RIS. *Caps.* two-celled: *Bloss.* gaping: *Seeds* angular, pointed, few.

LINNÆ'A. *Berry* three-celled, juiceless: *Bloss.* bell-shaped: *Calyx* superior, double.

GYMNOSPERMIA.

A'JUGA. *Bloss.* upper lip very small, notched, shorter than the stamens.

A. pyramida'lis. Plant hairy, with its numerous flowers forming a tetragonal pyramid: leaves oblong, crenate: root-leaves very large.

Fl. Dan. 185—(*E. Bot.* 1270. E.)—*Blackw.* 64. 2.

(*Plant* four or five inches high. E.) *Stem* and *leaves* very hairy; *root-leaves* oblong wedge-shaped, sessile, entire, very large; *stem-leaves* oval, slightly toothed or scolloped, not three-lobed, diminishing upwards, so as to give the whole plant somewhat of a pyramidal form; in opposite alternate pairs; the upper tinged with purple. *Floral-leaves* longer than the flowers. *Flowers* from the bosom of the leaves, not more than three together, (in whorls, E.) *Calyx* very hairy, divided half-way down: *segments* awl-shaped, nearly equal. Woodw.

(Pyramidal Bugle. E.) Dr. Hope informs me that it has been found on Ben Nevis in Lochaber, and on the Burn of Killigower, and on the Ord of Caithness. On Torn Aichaltie, a hill near Brahan Castle, Ross-shire, by Mr. Gibb. 'P. May—June. E.)

(A. alpi'na. Stem simple: leaves nearly smooth, unequally toothed, nearly all of a size: whorls rather distant, many-flowered. E.)

E. Bot. 477—*Ludw.* 8—*Kniph.* 3—*J. B.* iii. 432. 1—*Pet.* 34. 4—*Riv. Mon.* 76; *Bugula montana.*

The pairs of the leaves and the whorls are rather distant, by no means crowded into a pyramidal form as in *A. pyramidalis,* nor are the radical leaves (as in that species) three or four times as large as those on the stem, and very hairy; but, on the contrary, the lower leaves are but little larger than the others, and all very nearly smooth, veiny, unequally toothed. The *bracteæ* sometimes quite entire, sometimes toothed; the uppermost only tinged with purple; whereas in *A. pyramidalis,* they are all reddish. *Flowers* from ten to twenty in each whorl. *Calyx* chiefly hairy at the teeth. *Flowers* pale, streaked with deeper blue. E. Bot.

Alpine Bugle. (*A. pyramidalis.* Huds. *A. Genevensis.* With. Ed. 3. E.) Mountains. (Mountains of Aberdeenshire. Mr. David Don. E.) Carnedd Llewelyn, Carnarvonshire. Ray. (On the flat near the summit of that mountain. Mr. Griffith. On the mountain that leads from Matlock into the town of Castleton, on the left hand side, immediately adjoining the road. Mr. Dawson Turner. It is erroneously stated in English Botany that this plant has been found in Durham by Mr. Robson; the specimen he sent to Mr. Sowerby was from his own garden. Mr. Winch.
P. June—July. E.)

A. REP'TANS. Plant smooth: stem solitary, throwing out creeping suckers: leaves egg-shaped, scolloped.

(*E. Bot.* 489. E.)—*Curt.*—*Fl. Dan.* 925—*Sheldr.* 35—*Riv. Mon.* 75. 1, *Bugula*—*Fuchs.* 391—*J. B.* iii. 430. 2 *and* 3—*Walc.*—*Kniph.* 3—*Trag.* 311—*Blackw.* 64. 1—*Lonic.* i. 145. 2—*H. Ox.* xi. 5. *row* 3. 1—*Barr.* 337 *and* 338—*Matth.* 962—*Dod.* 135. 2—*Lob. Obs.* 252. 1, *and Ic.* i. 475. 2—*Ger. Em.* 631. 1—*Park.* 525—*Ger.* 506. 1.

In high and dry situations it becomes somewhat hairy, the stem less distinctly four-sided, the spike tapering upwards; the creepers short; approaching to *A. Genevensis*, but has only one stem from a root whilst the latter has many. Gough. *Leaves* egg-shaped. *Root-leaves* scolloped, on leaf-stalks. *Stem-leaves* nearly entire, sessile, in opposite cross pairs; the upper purplish. *Blossom* blue, red, or white, in a long leafy spike, (lower lip four-cleft. Sm. *Stem* solitary, upright, nearly a foot high, quadrangular, leafy, tinged with purple. E.)

Common Bugle. (Irish: *Glassan heile.* Welsh: *Golchenid cyffredin; Glesyn y coed.* E.) Moist meadows, pastures, and woods. The variety with white blossoms has been observed by the Editor in a field at Smallheath, near Birmingham. In Anglesey, by the Rev. Hugh Davies. Abounds in the Isle of Wight. Sir J. E. Smith. E.)
P. May—July.

A. CHAMÆ'PITYS. Leaves three-cleft, strap-shaped, very entire: flowers sessile, lateral, solitary: stem spreading, branched.

E. Bot. 77—*Kniph.* 8—*Ludw.* 130—*Riv. Mon.* 14. 1, *Chamæpitys*—*Fl. Dan.* 733—*H. Ox.* xi. 22. *row* 3. 1—*Dod.* 46. 1—*Lob. Obs.* 207. 2, *and Ic.* i. 382. 2—*Ger. Em.* 525. 1—*Matth.* 940—*Ger.* 421. 1—*Park.* 283. 1—*Fuchs.* 886—*J. B.* iii. 295. 1 *and* 2—*Trag.* 80—*Blackw.* 528—*Lonic.* i. 159. 2.

(*Plant* viscid. *Stems* hairy, purplish. E.) *Leaves* hairy, the lower entire, the rest cloven deeper and deeper till the upper ones are almost divided to the base; segments strap-shaped. *Flowers* nearly unilateral, single, or in pairs. *Calyx* very hairy. *Blossom* (yellow; *upper lip* short, notched; E.) *lower lip*, middle segment somewhat heart-shaped, smooth, spotted with red, the rest very hairy. Woodw.

(Yellow Bugle. E.) Ground Pine. *Teucrium Chamæpitys.* Linn. Huds. Relh. Dicks. Oed. Ehrh. But the structure of the upper lip of the blossom is not like that of *Teucrium*, deeply divided with the stamens standing in the division, but short and slightly notched as in *Ajuga*. On this account it has been removed from the former genus by Haller, Schreber, and Smith.

Sandy fallow-fields. About the borders of Triplow heath, Cambridgeshire; about Rochester and Dartford. Roehill. (Corn-fields about Tunbridge Wells. Forster. Frequent in Surry and Kent. At St. David's, Pembrokeshire, on the walls and houses. Sir T. G. Cullum. In corn-fields near Purfleet, Essex. Mr. E. Forster, jun. Dry pastures on Luton Downs, Bedfordshire. Mr. J. Sibley. Bot. Guide. Juniper Hill, Box Hill, and near Epsom, Surry. Mr. Winch. E.) A. April—June.*

TEU'CRIUM. Upper lip erect, deeply divided, even below the base: stamens in the division.

T. CHAMÆ'DRYS. Leaves wedge-egg-shaped, cut, scolloped, on leaf-stalks: flowers axillary, three together: stems nearly cylindrical, somewhat hairy.

(*E. Bot.* 680. E.)—*Woodv.* 243—*Kniph.* 11—*Tourn.* 97. 1. β.—*Sheldr.* 87—*Blackw.* 180—*Riv. Mon.* 10—*Fuchs.* 869—*J. B.* iii. 288. 1—*Ger.* 530. 1, 2, *and* 3—*Matth.* 818—*Trag.* 204—*Lonic.* i. 62. 4—*Dod.* 43. 1 *and* 2—*Lob. Obs.* 260. 1, *and Ic.* i. 491. 1 *and* 2—*Ger. Em.* 656. 1 *and* 2—*Park.* 104—*H. Ox.* xi. 22, 10 *and* 11—*Clus.* i. 351. 1.

Leaves entire at the base, hairy; the upper oval-spear-shaped, often purple. *Flowers* on fruit-stalks. Woodw. *Calyx,* the upper segment broadest, the two lower ones narrowest, beset with white globules. *Blossom* reddish purple, externally with white globules; middle segment of the lower lip lopped, with a double row of hairs at the base. (*Stems* nearly upright, branched, six to twelve inches high. E.)

GERMANDER. WALL GERMANDER. (Irish: *Niulurah.*) On ancient walls. Borders of Corn-fields far from any house. Ruins of Winchelsea Castle. Dr. Sherard, in Ray. Norwich city walls. Mr. Crowe. In the area of Carisbrook Castle in the Isle of Wight. Dr. Stokes. Whittingham Castle, near Oswestry. Rev. S. Dickenson. (On old hedge-banks near Gateshead Park engine, Durham. Winch Guide. On old walls at Balgavis, east of Forfar; and at Kelly, east of Arbroath, Angushire. Mr. G. Don. Hook. Scot. E.) P. June—July.†

T. SCORODO'NIA. Leaves heart-shaped, serrated, stalked: flowers in lateral bunches, unilateral: stem erect.

Curt. 295—*Kniph.* 11—(*E. Bot.* 1543. E.)—*Blackw.* 9—*Dod.* 291—*Lob. Obs.* 262. 1, *and Ic.* i. 497. 2—*Ger. Em.* 662—*Park.* 111. 2—*H. Ox.* xi. 20. 15—*Riv. Mon.* 12—*Fl. Dan.* 485—*Trag.* 15. 2—*Lonic.* i. 112. 3—*J. B.* iii. 295. 1, *and* 294.

Stem acutely quadrangular, hairy, (leafy, a foot high, or more. E.) *Branches* opposite. *Leaves* heart-spear-shaped, opposite, wrinkled, (slightly viscid, aromatic, bitter. E.) *Flowers* in pairs. *Calyx* a little woolly, upper lip broad, reflexed; the lower with four very shallow clefts terminating in pointed incurved teeth. *Blossom* straw-coloured, woolly; *tube* longer than the calyx; *upper lip* none, but the top of the tube slightly cloven: (*Stamens* violet-colour, exserted. E.)

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* This plant has a degree of bitterness and acrimony, but its real use is far from being accurately ascertained. It stands recommended in the gout, jaundice, and intermitting fevers.

† The herb is bitter, with a degree of aróma, and may be used with advantage in weak and relaxed constitutions. It is an ingredient in the celebrated gout powders.

Wood Sage. Wood or Sage Germander. (Welsh: *Triagl y cymro; Chwerwlys yr eithin.* E.) Woods, heaths, thickets, and ditch banks.
P. July.[*]

T. scor'dium. Leaves oblong, sessile, toothed, nearly naked: flowers in pairs, on fruit-stalks, axillary: stem pubescent, spreading.

(*E. Bot.* 828. E.)—*Blackw.* 475—*Fl. Dan.* 593—*Woodv.* 57—*Matth.* 842—*Ger.* 534. 1 *and* 2—*Trag.* 885—*Riv. Mon.* 11, *Scordium*—*Dod.* 126. 2—*Lob. Obs.* 261. 3, *and Ic.* i. 497. 1—*Ger. Em.* 661—*Park.* 111. 1—*H. Ox.* 11. 22. 14—*Lonic.* i. 196. 3—*Fuchs.* 776—*J. B.* iii. 292. 2.

Stem hairy, (somewhat branched, nearly prostrate. E.) *Leaves* an inch long, sessile, tapering and entire at the base, serrated upwards, those at the top of the branches oval-spear-shaped, nearly entire. *Calyx* hairy, purplish. Lower flowers often solitary. Woodw. (*Flowers* purplish, the middle lobe spotted. E.)

Water Germander. Marshes in the Isle of Ely. Between Cambridge and Histon; Waterbeach; Cottenham. (On the banks of the Isis near High-bridge, and on Enesham Common, Oxon. Sibthorp. E.)
P. July—Aug.[†]

NEP'ETA.[‡] *Bloss.* middle segment of the lower lip scolloped: *Mouth,* the edges reflexed: *Stamens* approaching.

N. cata'ria. Flowers in spikes: whirls on short fruit-stalks: leaves on leaf-stalks, heart-shaped, tooth serrated, downy.

E. Bot. 137—*Blackw.* 455—*Fl. Dan.* 580—*Kniph.* 9—*Dod.* 99—*Lob. Obs.* 276. 1, *and Ic.* i. 511. 1—*Ger. Em.* 682. 1—*Pet.* 32. 1—*Matth.* 719—*Lonic.* i. 112. 1—*Riv. Mon.* 52, *Nepeta*—*Trag.* 15. 1—*Ger.* 554. 1—*H. Ox.* xi. 6. *row* 2, 3.

(Two or three feet high. E.) *Whorls* mostly turned to one side of the stem. *Calyx* downy, with green ribs. *Blossom* white, with a tinge of red, and spotted with purple; *tube* nearly straight; *lower lip*, middle segment with six or seven equal teeth turned upwards, with a tuft of white bristles at the base. *Stamens* rather longer than the upper lip. (*Stem* and *leaves* hoary. The whole *plant* exhales an aromatic odour. E.)

Nep. Cat-mint. (Welsh: *Mintys y gath.* E.) Pastures and hedges in calcareous soil. Near Bungay. Mr. Woodward. Wick Cliffs, Glostershire. Mr. Swayne. On the beach at Rampside, Low Furness. Mr. Atkinson. (Oversley, Warwickshire, by the sides of the turnpike road. Purton. Near Moel y don ferry, Anglesey. Welsh Bot. Road side between Culross and Kincardine. Maughan. Hook. Scot. About

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[*] The people of Jersey are said to make use of it in brewing, (calling it *Ambroise.* E.) It possesses the bitterness and a good deal the flavour of hops. (In Young's Annals of Agriculture is a dissertation by the Rev. P. Laurents, highly extolling this plant as a substitute for hops. Dr. Rutty confirms the idea of its possessing qualities worthy attention; as does the name, *Ambrosia*, bestowed on it by some authors. E.)

[†] The fresh leaves are bitter and somewhat pungent. Powdered, they destroy worms. A decoction of this plant is a good fomentation in gangrenous cases. If cows eat it when compelled by hunger, their milk acquires a garlic flavour. Sheep and goats eat it. Horses, cows, and swine refuse it.

[‡] (From *nepa*, a scorpion; it being reputed efficacious against the bite of that reptile. E.)

Whitchurch, near Denbigh, and in many places by the road side between Denbigh and Ruthin. E.) Dudley Castle: Needwood Forest, Staffordshire. P. July.*

VERBE'NA.† *Bloss.* funnel-shaped, curved; segments nearly equal: *Calyx*, one of its teeth shorter: *Seeds* two or four, naked.

V. OFFICINA'LIS. Spikes slender, panicled: leaves deeply laciniate: stem solitary.

(*E. Bot.* 767. E.)—*Ludw.* 149—*Curt.*—*Kniph.* 4—*Riv. Mon.* 56, *Verbena*—*Woodv.* 218—*Walc.*—*Clus.* ii. 45. 2—*Dod.* 150. 1—*Lob. Obs.* 289. 2, *and Ic.* i. 534. 2—*Ger. Em.* 718. 1—*Park.* 675. 1—*Fl. Dan.* 628—*Blackw.* 41—*Trag.* 210—*Matth.* 1052—*Ger.* 580. 1—*Fuchs.* 593—*J. B.* iii. 443—*Lonic.* i. 138. 2.

Lower-leaves deeply lobed, and jagged, the *upper* three-cleft, or simple. Woodward. *Stem* nearly quadrangular, panicled. *Flowering branches* in opposite pairs. *Floral-leaves* spear-shaped. *Calyx* one of the teeth much smaller and shorter than the rest, but not lopped; angles hairy. *Blossom* small; *tube* fringed at the top with hairs; *mouth* with two lips, the upper cloven into two, the lower into three nearly equal segments; purplish. *Stamens* four, two of them longer. *Seeds* four, (the *pellicle* evanescent, leaving them naked. E.) The structure of the flower and fruit must inevitably lead the English Botanist to look for it in this Class, though Linnæus has placed it in Diandria, because the greater number of species have only two stamens. (*Root* woody, branched. *Stem* one foot and a half high, upright, rough with scattered prickles, curved at the bottom. *Stamens* very short, inclosed within the tube of the blossom. Fl. Brit. E.)

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* An infusion of it is deemed a specific in chlorotic cases. Two ounces of the expressed juice may be given for a dose. Cats are so delighted with this plant, especially when withered, that they can hardly be kept out of the garden wherein it grows, (rolling themselves on it, tearing it up, and chewing it with evident pleasure. These animals are also affected with a like whimsical predilection for *Teucrium Marum.* E.) However inexplicable, Miller confirms the old saying, "If you set it, the cats will eat it; if you sow it, the cats will not know it." It cannot well be planted without being more or less bruised. Stokes. Sheep eat it. Cows, horses, goats, and swine refuse it.

† (From the Celtic name *Ferfaen*, and probably referring to its use in the rites of heathen worship, and the idolatrous sacrifices of the pagans. "Vainly conceiting," as a sensible old writer observes, "that it could drive away the devil, whose great design has ever been to entice ignorant men, by such subtile craft, to sorcery and witchcraft; by trusting to creatures, more than the Creator, which is one accursed way of taking God's name in vain." "Thus have I seen," says the same author, "a man wearing an iron ring made of the clasps of a dead man's coffin, to cure the rheumatism! But those who prescribe such charms are no better than wizards; and those who use them, may say the devil is their helper; which homologates the renouncing of the Covenant of God." Equally efficacious is the notable "*Muscus innatus cranio humano*," the *moss growing on a dead man's scull*, an Irish specific, according to Threlkeld, "where the poor people, who are naturally hospitable, being misled by *restless companions*, run into war, foolishly thinking to throw off *the blessing of the English government*." Well would it be if all such pretended amulets were put to the test practised by Albert, Duke of Saxony, on a juggler who offered thus to impart infallibility to him. "Well," quoth the Duke, "that I may be sure of it, I will make the trial first upon thee;" so drew his sword, and hacked the fellow insomuch that neither by the *Shemham-phorasch*, nor by the hanging of the *Kamea*, (a parchment wherein the sacred names were written), could he be cured."—We should blush to record errors so gross, and long since consigned to oblivion, did not the peculiar "signs of the times," indicate a revival even of such absurdities. E.)

VERVAIN. SIMPLER'S JOY. (Welsh: *Cas gan gythraul; Llys yr hudol.* q. d. Enchanter's plant. E.) "A waste-loving plant." Stone walls, sides of great roads, (and about villages. Rare in Scotland. E.) At the foot of St. Vincent's Rocks along the course of the river, very plentiful. (Banks of Tyne at Bywell, and the Riding, Northumberland; and near Darlington, Durham. Winch Guide. On the Point, near Beaumaris. Welsh Bot. Without the gates of Inverkeithing. Dr. Parsons, in Lightf. In the lower part of the grounds of Wick House, Brislington, Somersetshire, near the Withy bed. Prevalent about Teignmouth. Undercliff, Isle of Wight. E.) P. Aug.—Sept.*

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* (Vervain has so little pretension to sensible qualities, or even to external attraction, that it is surprising it should have acquired such general notoriety, either for its medicinal virtues as a deobstruent, especially efficacious in the cure of scrophula; or for the more mystic powers in times past universally attributed to it; for it was believed to be capable of curing the bites of all rabid animals, arresting the progress of the venom of serpents, reconciling antipathies, conciliating friendships, &c. And yet there is no well-grounded reason to doubt our plant being the genuine "*Herba Sacra*" of the ancients; in honour of which *Verbenalia* were annually held; and one of several which were more immediately appropriated to the use of the altar and the decoration of the priesthood: though it must be admitted that the dry harsh nature of our herb but ill accords with the "*pinguis Verbena*" of Virgil, any more than with the prevalent idea of an evergreen. Vervain was usually offered as a pledge of mutual good faith between the Romans and their enemies; as in the solemn league between Tullus Hostilius and the Albans; and may, in powerful protection, be deemed equivalent to the more modern flag of truce: for, on like occasions, as Drayton observes,

"A wreath of *Vervain* heralds wear."

Ambassadors and heralds at arms likewise wore chaplets of Vervain on denouncing war or conveying messages of defiance. But surely these usages would seem to imply some more ostensible production.

Where "Dark superstition's whisper dread
Debarr'd the spot to vulgar tread,"

the sanctimonious Druid instilled veneration for the Vervain nearly equal to that claimed for the Misseltoe: and thus Mason describes its connexion with these solemn incantations,

"Lift your boughs of *Vervain* blue
Dipt in cold September dew;
And dash the moisture, chaste and clear,
O'er the ground, and through the air.
'Now the place is purg'd and pure."

Vestiges of these superstitions, though extinct in Britain, may still be traced in Germany and some parts of France, where the rustics are wont to gather the plant under certain phases of the moon, accompanied by unintelligible cabalistic ejaculations, believing that the herb thus procured will operate as a charm against every calamity, natural or supernatural, and even possess the power

"That hind'reth witches of their will."

Vain were it to revive the recollection of what has long, to common understandings, been deservedly forgotten, (even though the neglected weed seems to hanker after its lost fame, and to linger around the dwellings of man,) did not the British public of the nineteenth century appear to be impelled (by a somewhat erratic "march of intellect,") towards the opposite extremes of superstition and infidelity. It may, therefore, possibly be profitable at least to one portion of the community, in such anticipation, to record the abundant efficacy of this amulet, when suspended round the neck, (as conscientiously accredited through successive ages, till recently denominated the darker); nor might it be imprudent in the simpler to anticipate a more extended demand for a commodity

MEN'THA.* *Bloss.* nearly equal, four-cleft: *Filaments* spreading wide.

(The numerous species of *Mints* are arranged according to the reformed plan of Smith, condensed from the 'Menthæ Britannicæ' of Mr. Sole, whose accurate and finely executed figures have greatly facilitated the elucidation of this intricate genus, and not less so the valuable observations of the President of the Linnæan Society. (Linn. Tr. vol. v.) Whence it appears that for specific distinction we must chiefly rely on the *situation* and *direction* of the hairs or bristles, especially those of the calyx and flower-stalk. E.)†

(1) *Flowers in spikes.*

(M. SYLVES'TRIS. Spikes hairy, scarcely interrupted: leaves with toothed serratures, downy chiefly beneath: floral-leaves awl-shaped, calyx hairy all over.

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respecting which Ray, (doubtless in ignorance), presumed to exclaim, "Mirum tot viribus pollere plantam nulla insigni qualitate sensibili dotatam!" and which father Gerard himself, in honest simplicity, still more unceremoniously denounces, despite the authority of Dioscorides, Pliny, and a host of veracious commentators; "Many odde olde wives fables are written of Vervaine tending to witchcraft and sorcerie, which you may reade elsewhere, for I am not willing to trouble your eares with reporting such trifles as honest eares abhorre to heare. Most of the later Phisicians do give the juice or decoction heerof to them that have the plague; but these men are deceived, not onely in that they looke for some truth from the father of falshood and leasings, but also bicause insteede of a good and sure remedie they minister no remedie at all; for it is reported, that the *divell did reveale it as a secret and divine medicine.*" p. 582. Nevertheless, as a charm to conciliate friendship, we would not willingly relinquish even this simple talisman.

"There are fairer flowers that bloom on the lea,
And give out their fragrant scent to the gale;
But the *Vervain*, with charmed leaf, shall be
The plant of our choosing, though scentless and pale.

For, wrapp'd in the veil of thy lowly flower,
They say that a powerful influence dwells,
And that, duly cull'd in the star-bright hour,
Thou bindest the heart by thy powerful spells.

We will plant thee beneath our sheltering tree,
In our bower we will bid thy blossoms unfold;
So faithful and firm may our friendships be,
So never may glowing hearts grow cold." Wild Garland. E.)

* (From the Greek Μενθη the nymph MINTHE, daughter of Cocytus, and a favourite of Pluto, whom Proserpine, instigated by an evil passion, metamorphosed into this plant: though Ovid would appear somewhat incredulous of the fact.

"*Could* Pluto's queen with jealous fury storm,
And Menthè to a fragrant herb transform?" E.)

† (The general utility of Mints is well known, and universally admitted, though we are not to expect the wonderful results described by some ancient writers. For culinary purposes Spear-Mint is preferred, as in sauce, salads, &c. but for medicine, Peppermint and Pennyroyal are more efficacious. A conserve of the leaves is very grateful, and the distilled waters, both simple and spirituous, are agreeable. The virtues of Mint are those of a warm stomachic and carminative. In hysteria, nausea, and cholicky pains, as a cordial, few simples prove more beneficial. In such cases the best preparation is a strong infusion of the dried herb in water, (which is much superior to the green,) or a tincture or extract with the rectified spirit. Pennyroyal has not undeservedly been held in esteem as a deobstruent. These herbs should be cut in a very dry season, and just when they are in flower; if cut in the wet they will change black, and be little worth. E.)

E. Bot. 686.

Stem nearly three feet high, upright, leafy, quadrangular, rough with hairs pointing downwards. *Leaves* sessile, opposite, varying in figure and breadth. *Spikes* terminal, panicled, sharpish, composed of numerous dense whorls, with but little space between even the lowermost: each whorl accompanied by a pair of tapering, projecting, awl-shaped *floral-leaves,* the lowermost of which are dilated at the base. *Calyx* small, hairy all over with tapering teeth, longer than the tube. *Blossom* twice as long as the calyx, hairy, of a pale lilac colour. *Stamens* inclosed within the blossom. The whole *herb* has a strong aromatic smell, is of a hoary or greyish green, and clothed with soft hairs.

Var. 1. Leaves spear-shaped, acute.

M. sylvestris. Linn.—*M. villosa prima, Sole. Menth.* 3. *t.* 1—*Dod.* 96—*Ger. Em.* 684. 3—*J. B.* iii. 221.

Var. 2. Leaves egg-shaped, acute.

M. villosa secunda, Sole. Menth. 5. *t.* 2—*Fl. Dan.* 484—*Riv. Mon.* 51. 1—*Fuchs.* 292—*Cam. Epit.* 479.

By the water side at Bottisham Load mill, Cambridgeshire; in the house-close of an Inn at Hillington, Middlesex. Frequent in Hertfordshire. Sole.

Var. 3. Leaves shorter; spikes blunter. Plentiful in Kent.

Var. 4. Leaves elliptical, broad, and blunt.

M. rotundifolia, Sole. Menth. 9. *t.* 4—*Fuchs.* 289.

In Kent and Essex, but rare. Eleven miles from Norwich in the road to Hingham. Mr. Crowe. At Thorpe, near Norwich. E.)

HORSE MINT. Marshy and watery places. Burwelbeck. Lincolnshire; behind the alms-houses at Great Yeldham, Essex. Lewisham, Kent; between Ripley and Guildford. Bungay, frequent. Mr. Woodward. Thorn, Yorkshire. Mr. Robson. P. Aug.

(M. ROTUNDIFO'LIA. Spikes somewhat hairy, interrupted: leaves roundish, blunt, wrinkled, scolloped, downy beneath: floral-leaves spear-shaped. E.)

E. Bot. 446—*Sole. Menth.* 7. *t.* 3—*Riv. Mon.* 51. 2—*J. B.* iii. 219. 2.

Leaves rather serrated than scolloped. Whole plant woolly, grass green. *Flowers* pale red, much resembling those of the preceding species. *Stems* two to three feet high, upright, square, hairy or shaggy, the hairs pointing more or less downwards. *Leaves* underside shaggy, not hairy; all the veins fringed with close hairs. *Spikes* several, terminal, upright, sharpish, not very densely whorled. *Calyx* small, bell-shaped, covered with rough hairs. *Stamens* much longer than the blossom. The whole *herb* strong smelling, and tending to viscidity. *Leaves* occasionally variegated with white. E.)

ROUND-LEAVED MINT. (Welsh: *Mintys lledcrynddail.* E.) *M. rotundifolia. M. crispa.* Linn. *M. sylvestris.* Sole. Watery places River side, at Lydbrook, near Ross, Hertfordshire; near Falkburn Hall, Essex. Ray. Near Hally, Kent. Doody. Hornsey and Harefield church-yards. Blackstone. Near Saltburn, Yorkshire, by the sea, in a dry sandy place. Mr. Robson. (On the edge of an old moat at Shingham, Norfolk.

Rev. R. Forby. Waste places at North Bovey, Devon. Rev. J. P. Jones. Lowdore, Cumberland; Studley Woods, Yorkshire. Mr. Winch. About Lanvayer, and on the side of the road from Abergavenny to Monmouth, near to the last town. Purton. By the road side in Llanfairynghornwy, Anglesey. Welsh Bot. E.) P. Aug.[*]

M. VIR'IDIS. Spikes interrupted: leaves spear-shaped, naked, serrated, pointed, sessile; (floral-leaves bristle-shaped, somewhat hairy, as well as the teeth of the calyx: flower-stalks very smooth. E.)

(*Sole Menth.* 11. *t.* 5—*E. Bot.* 2424. E.)—*Woodv.* 170—*Cam. Epit.* 477—*Ger.* 552. 2—*Dod.* 95. 4—*Lob. Obs.* 271. 4, *and Ic.* i. 508. 1—*Ger. Em.* 680. 4—*Park.* 31—*Dod.* 95. 3—*Lob. Obs.* 271. 3, *and Ic.* i. 507. 2—*Ger. Em.* 680. 3—*Pet.* 31. 7—*Fuchs.* 290—*J. B.* iii. 220—*Trag.* 20. 2—*Lonic.* i. 113. 2—*Matth.* 712.

Leaves strap-spear-shaped. *Spikes* of flowers much longer than broad. (*Stem* two or three feet high, upright, smooth, sharply angular, branched, often tinged with purple. *Flower-stalks* and *tube* of the *calyx* perfectly smooth, though the teeth of the latter are not always free from hairiness. *Floral-leaves* generally ciliated. *Flowers* of a bright red colour, dotted within. *Stamens* tipped with red knobs. E.)

Var. 2. Stem red, taller, thicker, and stronger, and divided at the top into more flowering branches. Leaves blacker, shorter, and not so taper-pointed, appearing blunter, more wrinkled, teeth not so fine. Flowers smaller and paler. Scent stronger, and not so agreeable. Ray.—(Teeth of the calyx fringed with hairs. E.)

Pluk. Mant. 129.

By the river side at Bocking, Essex. Dale. On the river Medway, near Maidstone. Plukenet. At Babergh, near Norwich. Mr. Pitchford.

Var. 3. Narrow-leaved, smooth, with a broader spike; teeth of the calyx fringed with longer and more numerous hairs.

Bauh. Pin. 227.

In a meadow at Bocking. Dale.

Var. 4. Spike smooth; leaves broader; teeth of the calyx fringed with hairs.

(*M. sativa* of Pharm. Lond. E.)

SPEAR MINT. (*M. spicata, a viridis.* Linn. Watery places and banks of rivers. Near Exmouth, and on the banks of the Thames. Hudson. (By the sides of rills in the vale of Cerig, near Chirk Castle, Denbighshire. Mr. Griffith. By the side of the Avon between Bath and Kelston, and on a common between Glastonbury and Wells. Mr. Sole. E.)

P. July—Aug.[†]

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[*] (Mr. Sole states this to be the true *Menthastrum* of the shops, and deduces that the Monks, the physicians of their times, were well acquainted with its virtues, from its still being frequently found about the ruins of abbeys and monasteries. He finds it speedily cure chlorosis, and wonderfully refresh the brain, removing the dull stupid langour subsequent to epileptic fits. E.)

[†] The flavour of this species being more agreeable than that of the others, it is generally preferred for medical and culinary purposes. A conserve of the leaves is very grateful, and the distilled waters, both simple and spirituous, are universally thought pleasant. The leaves are used in spring salads; and the juice of them, boiled up with sugar, is formed into tablets. The distilled waters, and the essential oil, are often given to stop vomiting, and frequently with success. From the circumstances noticed under *M. arvensis*, it has been

M. piperi'ta. (Spikes blunt, interrupted below: leaves egg-shaped, stalked, smoothish: calyx very smooth at the base. E.)

Stem upright, branched, a little hairy, with recurved hairs, often purplish. *Leaves* dark green, sharpish, serrated, rather smooth above, more or less hairy, but never downy or shaggy beneath. *Spike* terminal, the lowest whorl remote, stalked, sometimes spiked. *Floral-leaves* spear-shaped, fringed. *Calyx* slender, furrowed, dotted, the teeth dark purple and fringed. *Blossom* purplish.

Var. 1. Leaves egg-spear-shaped; spikes elongated to a point.

Sole Menth. 15. *t.* 7—*E. Bot.* 687—*Woodv. Med. Bot. t.* 169—*Pet. t.* 31. *f.* 10—*Blackw.* 291. 2. *stamens represented too long.*

The true *Peppermint* of the London Pharmacopœia: first discovered by Dr. Eales in Hertfordshire. Ray. In a swampy place on Lansdown, near Bath, called the Wells; also by the side of the Avon in Newton Mead. Mr. Sole. In a rivulet in Bonsall Dale, near Matlock. Sir J. E. Smith. Near the river at Tamworth.

Var. 2. Leaves egg-shaped; spikes with their points abridged, almost capitate.

Sole Menth. 19. *t.* 8—*R. Syn. t.* 10. *f.* 2.

Herb Sherard. By Wandsworth river. About Bath in various watery places; between Wells and Glastonbury; also in Chiltern bottom, Wilts. Mr. Sole.

Var. 3. Larger in every respect than the other varieties; leaves broad, almost heart-shaped; spikes long and thick.

Sole Menth. 53. *t.* 24.

At Lyncomb Spa, and other wet places about Bath. Mr. Sole. At the south-west corner of Saham Meer, near Watton, Norfolk. Sir J. E. Smith.

PEPPER MINT. *M. piperita.* Hudson; not of Linnæus, his plant so named being only a variety of *M. hirsuta.* E.) Watery places and sides of rivulets. (Rare in Scotland. Near Edinburgh. Mr. Greene. Grev. Edin. E.) P. Aug.—Sept.[*]

(**M. citra'ta.** Spikes capitate, very blunt: leaves on short leaf-stalks, heart-shaped, naked on both sides: calyx and flower-stalks smooth.

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imagined, that cataplasms and fomentations of Mint, would dissolve coagulations of milk in the breasts; but Dr. Lewis says, that the curd of milk, digested in a strong infusion of Mint, could not be perceived to be any otherwise affected than by common water; however, milk in which Mint leaves were set to macerate, did not coagulate nearly so soon as an equal quantity of the same milk kept by itself. Dr. Lewis observes that dry Mint, digested in rectified spirits of wine, gives out a tincture, which appears, by day-light, of a fine dark green, but, by candle-light, of a bright red colour. The fact is, that a small quantity of this tincture is green, either by day-light or by candle-light, but a large quantity of it seems impervious to common day-light; and, when held between the eye and a candle, or between the eye and the sun, it appears red; so that if put into a flat bottle it may show either green, or red, as it is viewed through the flat side or through the edge of a bottle. (It is credibly reported that mice are so averse to the smell of mint, either recent or dried, that they will desist from their depredations on grain, cheese, and other stores, over which it is scattered. Probably the essential oils might prove equally preservative. E.)

[*] The stem and leaves are beset with numbers of very minute glands, containing the essential oil, which rises plentifully in distillation. Peppermint water is well known as a carminative and antispasmodic. The essence of Peppermint is an elegant medicine, and possesses the most active properties of the plant.

E. Bot. 1025—*Sole Menth.* 31. *t.* 9—*Moris. v.* 3. *t.* 6. *f.* 3.

Whole *plant* invariably smooth, emitting an orange-like scent. *Stem* about two feet high, four-sided, of a reddish or mahogany colour, terminating in a large round head of flowers of a light red colour. *Leaves* broad-heart-shaped, inclining to ovate, serrated; the nerves and under sides sometimes red. *Calyx* slender, furrowed, covered with glandular dots, dark purple. *Stamens* shorter than the blossom.

ORANGE or BERGAMOT MINT. *M. citrata.* Ehrh. Willd. *M. odorata.* Sole. Sm. Hull. With. Ed. 6. Not a variety of *M. hirsuta;* and perfectly distinct from *M. aquatica* of Linn. In watery places, not common. Frequent by the sides of rivers and brooks in Cheshire, especially about Aston House. Mrs. Walmsley. On the Milton side of the river, a little below Ditton, Cambridgeshire. Relhan. In a brook or ditch near Capel Cerig, between Llanrwst and Llanberris, North Wales. Mr. Sole. In a ditch near Bedford. Dr. Abbot. Mr. Turner, in Bot. Guide, observes that this plant gathered at Reedham, in Norfolk, on the east side of the town near the river, so greatly resembled *M. hirsuta,* as to be pronounced a variety of that species by Smith; yet in one year after it was brought into Mr. Wigg's garden it became quite smooth, and assumed the habit, as well as the smell, of *M. odorata.* P. July—Aug. E.)

(2) *Flowers in whorls.*

(M. HIRSU'TA. Flowers in heads or whorls: leaves stalked, egg-shaped: calyx covered with erect hairs: flower-stalks rough with recurved ones.

(*Hook. Fl. Lond.* 166. E.)—*E. Bot.* 447—*Sole Menth.* 25. *t.* 11, *and* 23. *t.* 10 —*Ger. Em.* 684—*J. B.* iii. 224—*Moris. Sect.* 11. *t.* 7. *f.* 6—*Riv. Monop. Irr. t.* 49—*Fl. Dan.* 638—*Blackw.* 32.

This species occasionally affords an instance of the remarkable change of a capitate Mint to a whorled one, which may often be traced in the same ditch. Whole *plant* more or less hairy, often tinged with purple, of a variable scent, generally acrid and aromatic, sometimes like camphor, at others sweet. *Stem* upright, much branched. *Leaves* serrated, of various size. *Floral-leaves* often spear-shaped, hairy. *Calyx* tubular, furrowed, purplish, beset with glandular dots, covered all over with reflexed hairs of various lengths. *Blossom* pale purple, hairy on the outside. *Stamens* varying in length. The lower whorls often pedunculate.

Var. 1. of Smith's arrangement, represented by the above-cited figures, comprehends every thing that has been taken for *M. aquatica* and *M. hirsuta* of Linnæus:—it is likewise the *Origanum vulgare* of Fl. Dan.; *M. hirsuta* of Huds. E. Bot. With. Ed. 4. It varies greatly in colour and hairiness as growing in moist or dry situations. Stamens longer than the blossoms. Flowers capitate.*

Var. 2. Nearly resembling the former variety, but of a peculiarly fragrant smell, according to Dill.

R. Syn. 233. *t.* 10. *f.* 1.

In the parish of East Bourne, Sussex, in the road to Pevensey. Dillwyn.

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* (*Uredo Menthæ,* "in light reddish-brown spots, thinly scattered on the under side of the leaf," is found on this plant; as we have remarked on specimens which we collected at Ogwell mill, near Newton, Devon; where this species of Mint is gathered for distillation. E.)

Cornwall. Mr. Watt. Near the mill at Lilleshall, Shropshire.

Var 3. Rather more slender, of a paler hue, and the leaves somewhat less hairy. Flowers in heads. Stamens shorter than the blossom. Remarkable for its Peppermint flavor. This is *M. piperita* of Linnæus and Bergius, cultivated in the North of Europe for Peppermint, but distinct from what is generally used in this country.

A native of England. Herb. Banks.

Var. 4. Strikingly distinguished by its inflorescence, the head being lengthened out into a leafless spike of several whorls, more or less crowded together. Lowermost whorl generally axillary and pedunculate, sometimes elongated into a little spike. Leaves underneath paler, and considerably hairy. Blossom, as in other Mints, occasionally assuming the shape of a concave or galeated upper-lip. Spiked or capitate.

M. palustris, Sole Menth. 13. *t.* 6—*J. B.* iii. 222—*Ger. Em.* 685—*Lob. Ic.* 510.

Near Bocking. Dale. On the south west shore of Saham meer, Norfolk. Smith. Plentiful in old ditches at Glastonbury, Wedmore, Birtle, &c. Somersetshire. Sole.

Var. 5. Flowers in whorls, but the whorls so close together as to resemble a spike. Flowers large, of a pale purple colour; stamens just equal with the blossom. Smells like Sweet Marjoram.

M. paludosa, Sole Menth. 49. *t.* 22.

In Holt fen at Streatham, near Ely; in a river by the side of Awdry Causeway, near Haddenham in the Isle of Ely. Sole.

Var. 6. Flowers in axillary clusters from many of the uppermost leaves forming whorls, each cluster is more or less pedunculate. Length of the stamens variable.

E. Bot. t. 448.

M. sativa. Linn. (synonyms excepted). Huds. *M. aquatica.* Lightf. *M. rivalis.* var. Sole. 45. *M. arvensis.* var. 2. With. Ed. 4. About rivulets on the side of Shotover Hill near Oxford. Mr. T. Bobart. On the banks of the river Lea near Hackney. Mr. E. Forster. At Saham and Ashill in Norfolk; also eleven miles from Norwich in the Hingham road, and in many other places. Smith. (By the Mole at Brockham. Mr. Winch. E.)

Var. 7. Verticillate, less hairy, and with rounder leaves. Dill. in Herb. Sherard.

In a ditch on the left hand of Chalk's Green, going from Braintree to Lee House. Dillwyn.

Var. 8. Whorled, very small, with an extremely fragrant odour. Herb. Buddl. *M. aquatica exigua.* Dill. in R. Syn. 232. (Ditches, rivulets, and other watery places. E.) By the side of the New River, near the upper end of Stoke Newington. Herb. Sherard. On Skoulton Common, near Hingham, Norfolk. Smith.

HAIRY WATER MINT. (Irish: *Cartloin.* Welsh: *Mintys blwog.* *M. hirsuta.* Sm. Relh. Hook. *M. sativa.* Tr. Linn. Soc. In ditches and watery places. Duddingston Loch, Edinburgh, several varieties. Dr. Greville. P. Aug.—Sept. E.)

(M. ACUTIFO'LIA. Flowers in whorls: leaves egg-spear-shaped, tapering at each end: calyx covered with hairs; those of the fruit-stalks horizontal.

E. Bot. 2415.

Much resembles the preceding species, but is rarely found. *Leaves* narrower, more pointed at each end, and more unequally serrated. *Whorls* altogether sessile.

FRAGRANT SHARP-LEAVED MINT. *M. acutifolia.* Sm. Hull. *M. verticillata.* Mill. Banks of rivers, or streamlets. On the river Medway. Rand. Between Rochester and Chatham. Miller. (Stations recently explored without success by Sir J. E. Smith. Mr. Griffith of Garn showed me this species growing in a wet ditch on the right hand side of the road from Whitchurch to Denbigh, in the autumn of 1810.

P. Sept. E.)

(M. RU'BRA. Flowers in whorls: leaves egg-shaped: stem upright, zigzag: fruit-stalks and lower part of the calyx perfectly smooth, hairy.

Sole Menth. t. 21. (*cal. erroneous. Sm. E.*)—*E. Bot.* 1413—*Hort. Eyst. Œst. Ord.* 7. *t.* 5. *f.* 1—*Moris. sect.* 11. *t.* 7. *f.* 2—*J. B.* iii. 2. 215—*Dod. Pempt.* 95—*Ger. Em.* 680—*Lob. Ic.* 507.

Unknown to Linnæus. Distinguishable by its *stem* being smooth, reddish, zigzag, with a very few short branches curved in various directions; rising to the height of five or six feet when supported by bushes; *leaves* deep-green, shining, nearly smooth; *blossoms* large, purple. Less liable to variation than many other Mints, of which it is decidedly the tallest and handsomest.

TALL RED MINT. (Welsh: *Mintys coch.* E.) *M. rubra.* Sm. *M. verticillata.* R. Syn. *M. sativa.* Sole. In ditches and by the sides of rivers. By Hackney river at the ferry-house. Herb. Sherard; the house remains, though no ferry since the building of Lea bridge. Peckham fields. Dillwyn. North Wales; also in various waters in Coalbrook Dale, and in a wet place between Kidderminster and Bridgnorth. Mr. Sole. By the road side between Edmonton and Enfield; also near Walthamstow. Mr. E. Forster. Under a wet hedge in the road from Watton to Saham church, Norfolk. Smith. Musselburgh. Mr. Borrer. Grev. Edin.

P. Sep. E.)

(M. GENTI'LIS. Flowers in whorls: leaves egg-shaped: stem much branched, spreading: base of the calyx and fruit-stalks nearly smooth.

Sole Menth. t. 18—*E. Bot.* 2118.

Herb about a foot and a half high, slightly hairy; when growing in dry ground gratefully aromatic. *Stem* upright, of a deep red colour, herbaceous, nearly smooth; *leaves* on short foot-stalks, ovate, serrated, roundish, pointed, light green, having short scattered hairs on both sides; veins reddish or whitish. *Foot-stalks* cylindrical, purple, often perfectly smooth. *Blossoms* pale purple; *stamens* shorter than the blossom.

Merely a var. of the preceding? Hooker.

Var. 1. Leaves longer, nearly elliptical; stems three feet high, rough.

M. rivalis. a.—*Sole Menth. t.* 20.

In Lock's Brook between Weston and Tiverton, Somersetshire. Mr. Sole.

Var. 2. Leaves variegated with yellow or white; whorls sometimes elevated on foot-stalks half an inch long; and these, though very rarely, slightly hairy.

Sole Menth. t. 19—*Moris. sect.* 11 *t.* 7. *f.* 5.

Variegated Mint. M. variegata. Sole. Common in gardens and about cottages, but rarely to be found truly wild.

Bushy Red Mint. *M. gentilis.* Linn. *M. rubra.* Sole. About several villages in Shropshire. Rev. E. Williams. In pools and brooks between Mole and Llanrwst, North Wales. Mr. Sole. In a ditch at Strouds Green, near Hornsey. Month Mag. Banks of Moffat Water, below Carrifrew. Dr. Walker. Hook. Scot. P. Aug. E.)

(**M. GRA'CILIS.** Flowers in whorls: leaves spear-shaped, nearly sessile: stem upright, much branched: flower-stalks and base of the calyx perfectly smooth.

Sole Menth. t. 16—*E. Bot.* 449.

Plant but slightly hairy; eighteen inches high; has no smell of Basil. *Leaves* sharp-pointed, serrated, narrowed at the base, sprinkled on both sides with short hairs, pale green. E.) *Stems* with more or less of a reddish tinge towards the top. *Leaf-stalks* flat, short. *Whorls* composed of two lateral umbels on very short fruit-stalks. *Floral-leaves* four or five under each whorl, two spear-shaped, the rest smaller and strap-shaped. *Calyx* slightly ribbed, coloured, sprinkled with shining dots. *Blossom* with white hairs on the outside, and within the tube. *Stamens* all of the same length, shorter than the blossom. *Style* half as long again as the blossom, deciduous. *Germens* four, on a yellowish green fleshy receptacle. *Blossom* pale red, (bearded at the point. E.)

(Var. 2. Stem branched only towards the top; leaves harsh, wrinkled, hairy, deeply serrated, hanging down close to the stem.

M. pratensis—Sole. t. 17.

Wet places in the New Forest, Alderbury Common, near the Roebuck, between Salisbury and Romney. Mr. Sole. E.)

Var. 3. Stem upright, almost smooth, two feet high, dark brown. Leaves smooth, long, narrow, deep green; lower ones on short foot-stalks, upper ones sessile; smelling strongly of Basil.

Sole Menth. t. 15—*Moris. sect.* 11. *t.* 7. *f.* 1—*Ger. Em.* 680.

M. gentilis. Sole. *M. cardiaca.* Ger. Em. Frequent in ditches near towns and villages, but scarcely wild.

Narrow-leaved Mint. *M. gracilis.* Sole. Sm. *M. gentilis.* E. Bot. With. Ed. 4. *M. rubra.* Huds. In moist meadows and watery places. At Bocking and Stoke Newington. Herb. Sherard. Near Walthamstow. Mr. B. M. Forster. Near Bradford, Wilts. Sole. At Saham, and Oxborough, Norfolk. Smith. (Together with *M. sylvestris* and *M. viridis*, var. 4. on the banks of the Elwy, just above the mill-dam on a farm called Ronce, one mile from St. Asaph. Mr. Griffith. E.)
P. Aug.—Sept. E.)

(**M. ARVEN'SIS.** Flowers in whorls: leaves egg-shaped: stem much branched, spreading: calyx bell-shaped, covered all over with horizontal hairs.

Sole Menth. 29. *t.* 12—*E. Bot.* 2119—*Kniph.* 11—*Fl. Dan.* 512—*Fuchs.* 435—*Trag.* 16. 2—*Moris. sect.* 11. *t.* 7. *f.* 5.

Plant pale, hoary, green, more or less downy. *Stem* diffusely branched.

Odour strong, occasionally resembling that of blue mouldy cheese. *Calyx* short, and campanulate, clothed with long projecting hairs. These marks sufficiently distinguishing this species. E.)

CORN MINT. (Welsh: *Mintys ar-dir.* E.) *M. arvensis* of Linn. and other authors. In the borders or between the furrows of corn-fields, especially in moist places. P. June—Sept.*

Var. 2. Flowers earlier, has a more shining surface, though slightly hairy. Leaves more recurved, and elliptical; stem upright.

M. præcox, Sole 31. *t.* 13.

In moist meadows. By the side of the Avon, near Bath, flowering about the middle of June. Mr. Sole. (By Derwentwater Lake, near Lowdore. Mr. Winch. E.)

Var. 3. Leaves shorter and broader; smelling like Sweet Basil.

M. gentilis. Miller. On the right hand of the road from Bocking to Gossfield. Dale. At Shelford, Cambridgeshire. Mr. Wigmôres. Ray. (At Prestwick Car, Northumberland. Mr. Winch. E.)

Var. 4. Leaves very broad, almost heart-shaped, marked with long parallel veins which render them rugose. Stem upright.

M. agrestis, Sole Menth. 33. *t.* 14—*E. Bot.* 2120.

Common in corn-fields and neglected gardens about Mendip Hills, Shepton Mallet, and Frome. Sole. In Sussex. Mr. Borrer. Near Trefriw; below Lligwy wood; and by the Old Park pool, near Beaumaris. Rev. Hugh Davies. E.)

(M. PULE'GIUM. Flowers in whorls: leaves egg-shaped: stem prostrate: flower-stalks and calyx downy all over: teeth fringed. E.)

E. Bot. 1026—*Sole Menth.* 51 *t.* 23—*Ludw.* 195—*Blackw.* 302—*Riv.* 23. 1. *Pulegium*—*Woodv.* 171—*Fuchs.* 198—*J. B.* iii. 256. 2—*Trag.* 23—*Matth.* 704—*Dod.* 282—*Lob. Obs.* 266, *and Ic.* i. 500. 1—*Ger. Em.* 671. 1—*Pet.* 32. 2—*Park.* 29—*Lonic.* i. 114. 3—*H. Ox.* xi. 7. *row* 2. 1.

(Far less than the preceding species; the smallest of the genus; with a peculiar, acrid smell. E.) *Stems* with four blunt angles, hairy, branched. *Leaves* small, thick, slightly toothed, uunderneath set with deep semi-transparent dots. *Blossom* twice as long as the calyx, very hairy, without; pale purple; (sometimes white. E.) *Stamens* equal. *Pistils* as long as the stamens.

PENNY-ROYAL MINT. (Welsh: *Brymlys; Colyddlys.* E.) *Pulegium.* Pharm. Lond. Moist heaths and pastures. Side of a pool at Robert's End, near Hanley Castle, Worcestershire. Mr. Ballard. (In Low Holm Mire, Cumberland. Rev. J. Harriman. On Rhôs y gâd, and Rhôs wen, in the parish of Llanfair y pwll, Anglesey. Welsh Bot. On the borders of a pond near Winston, Durham. Winch Guide. Side of a pool at Erdington, Warwickshire. E.) P. Aug.—Sep.†

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* (In some situations it is a troublesome weed to the agriculturist, the roots binding the soil, and thus obstructing pulverisation. It is readily extirpated by draining, and the drill and horse-hoe husbandry. Holdich. E.)

† (Employed to remove obstructions, being stimulant and tonic. E.) The expressed juice, with a little sugar, is not an inefficacious medicine in the hooping cough. A simple and spirituous water, distilled from the dried leaves, is kept in the shops. It is prescribed in hysterical affections, and is not without considerable anti-spasmodic properties. An infusion of the plant may be used with the same intention. *Musca pipiens; Cassido viridis* and *equestris*, and *Phalæna chrysitis* live upon the different species.

GLECHO'MA.* *Cal.* five-cleft : *Anthers* converging, each pair forming a cross ; (upper lip cloven. E.)

G. **HEDERA'CEA.** Leaves kidney-shaped, crenate.

(*E. Bot.* 853. E.)—*Ludw.* 62—*Vaill.* 6. 5 *and* 6—*Curst.* 143—*Woodv.* 28—*Fl. Dan.* 789—*Riv. Mon.* 67. 2, *H. minor*—*Lonic.* i. 205. 2—*Matt.* 626—*Dod.* 394—*Lob. Obs.* 336. 2, *and Ic.* i. 613. 2—*Ger. Em.* 856. 1—*Park.* 677. *h.*—*Walc.*—*J. B.* ii. 855. 2—*Ger.* 705—*Fuchs.* 876—*Blackw.* 225—*Trag.* 799.

Stamens occasionally imperfect, consisting of filaments only half the usual length, terminated by a reddish blunt point ; sometimes they are furnished with anthers, pale brown, containing no pollen, and scarcely broader than the filaments. St. *Roots* sending out trailing sucklers. *Leaves* heart-kidney or heart-shaped, beset underneath with hollow dots, in which are glands secreting an essential oil ; and above with little eminences, but which do not secrete any odoriferous oil, for this surface being rubbed gives out no peculiar scent, whereas the under surface affords a pleasant reviving fragrance. *Blossom* blue ; sometimes, though rarely flesh-colour.

(Plant varying much in luxuriance. E.) Unusually upright and more hairy, in

Riv. Mon. 67. 1, *Hedera terrestris*—*Vaill.* 6. 5—*Clus.* ii. 38. 2—*Ger. Em.* 704. 6—*Park.* 677. *a.*

GILL. GROUND IVY. ALE-HOOF, or TUN-HOOF : (the terminal being a Saxon word signifying (*caput*) a head ; as a chief ingredient. Irish : *Ahair Lussa.* Welsh : *Eidral ; Beidiawg lâs.* E.) Groves, hedge-banks, and shady places : (when in profusion making a beautiful appearance in spring. E.) P. April—May.†

LA'MIUM.‡ *Bloss.* upper lip entire, vaulted : lower lip inversely heart-shaped ; with a bristled-shaped tooth on each side.

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* (From γλυκυ, sweet wine ; as affording a pleasant beverage. E.)

† The leaves thrown into the vat with ale, clarify it and give it a flavour. (It was generally used for this purpose till the reign of Henry the Eighth, about which period hops were substituted. E.) Ale thus prepared is often drank as an anti-scorbutic. An infusion of the leaves is commonly taken as tea, and proves slightly tonic, expectorant, and aperient. The expressed juice, mixed with a little wine, and applied morning and evening, destroys the white specks upon horses' eyes. The plants that grow near it do not flourish.—It is said to be hurtful to horses if they eat much of it. Sheep eat it ; horses are not fond of it ; cows, goats, and swine refuse it. Little protuberances, composed of many cells, are sometimes found upon the leaves, and are occasioned by insects, (especially gall-gnats, *Cecidomyiæ.* Latr. *Tipulæ.* Linn. E.) *Phalæna libatrix* and *Cynips Glechomæ* live upon it. Linn. (*Anthidium manicatum* may occasionally be detected in the act of collecting the *tomentum* from this and other plants furnished with short woolly hair or down, for the purposes of nidification. Curt. pl. 61. E.)

‡ (Various are the conjectures respecting the derivation of this name. Ambrosinus indicates the most direct etymology from λαιμος, the throat, alluding to the shape of the flower : from which word also that of *Lamia* itself, as the appellation of a certain voracious beast or fish, or of a sorceress supposed to devour children, evidently originated. E.)

L. AL'BUM. Leaves heart-shaped; accuminate, serrated, hairy, on leaf-stalks: flowers about twenty in a whorl.

(*E. Bot.* 768. E.)—*Ludw.* 162—*Curt.* 115—*Kniph.* 3—*Riv. Mon.* 62. 1—*Fl. Dan.* 594—*Blackw.* 33—*Walc. Trag.* 8. 1—*Ger.* 566—*Matth.* 1129—*Dod.* 153. 1—*Lob.* 280. 2, *and Ic.* i. 520. 2—*Ger. Em.* 702. 1—*Park.* 605. 3.

(*Stems* upright. *Leaves* slightly hairy. E.) *Flowers* white, sometimes, though rarely, with a pinky tinge; twelve to twenty in a whorl. *Anthers* hairy black.

WHITE ARCHANGEL. WHITE DEAD-NETTLE. (Irish: *Neantog Maruh.* Gaelic: *Teanga-mhinn.* E.) On rubbish, in corn-fields, and on ditch banks. P. May—June.*

L. PURPURE'UM. Leaves heart-shaped, blunt, unequally crenate, on leaf-stalks: (upper ones crowded; tube of the blossom bearded within near the base. E.)

(*E. Bot.* 769, *and bloss.* 1933. E.)—*Curt.*—*Sheldr.* 69—*Fl. Dan.* 523—*Blackw.* 182. 1—*Kniph.* 3—*Riv. Mon.* 62. 2, *Galeopsis minor*—*Ger.* 568. 4—*Walc.*—*Dod.* 153. 2—*Lob. Obs.* 280. 1, *and Ic.* i. 120. 1—*Ger. Em.* 703. 3—*Park.* 605. 1, *and* 587. 11—*H. Ox.* xi. 11. 9.

(*Stems* smooth, branched at the bottom, naked about the middle, thickly set with leaves at the top. E.) *Flowers* six in the bosom of each leaf, in a double row. *Calyx* awned, fringed. Lyons. *Leaves* serrated, downy, but not rough; the ends often purplish, and pointing downwards. *Blossom*, lower border of the mouth whitish with purple streaks; the rest pale red, sometimes nearly white.

(A variety is recorded with leaves entire at the margins. E.)

RED DEAD-NETTLE or ARCHANGEL. DEE-NETTLE. (Welsh: *Marddanadlen gôch; Danadlen farw gôch.* E.) Rubbish, corn-fields, and kitchen gardens. A. April—Sept.†

L. (INCI'SUM. E.) Leaves deeply and irregularly cut: stem-leaves extending down the leaf-stalks: (interior of the blossom naked at the base. E.)

(*E. Bot.* 1933. E.)—*Pet.* 33. 3—*Pluk.* 41. 3.

(Resembling the last in habit. E.) *Leaves* deeply cut, almost lobed, tapering down into leaf-stalks. Mr. Robson introduced it into his garden, where it shed its seeds, and propagated itself three or four times, and all the plants have been of the same kind. It flowers and ripens its seeds, and these seeds produce others twice in the summer. Both this and the preceding are common about Darlington, often growing together; we may therefore conclude that the difference is not owing to soil and situation.

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* (The different species of *Lamium*, especially the White Archangel, are particularly acceptable to bees, and ought to be encouraged in the precincts of the apiary. E.)

† (Even this humble weed is not without its antagonist in the animal creation; for the chaffinch (*Fringilla cœlebs*) deflorates entire whorls of its early crimson blossoms while feed- the seeds, though in an unripe state. The family of *Primula*, and probably other owers, suffer in like manner. E.)

(CUT-LEAVED ARCHANGEL. Welsh: *Marddanadlen gôch a dail gwahanedig.* E.) *L. rubrum minus, foliis profunde incisis.* Ray Syn. 240. *L. purpureum β.* Huds. Relh. With. Ed. ii. (Fl. Brit. *L. incisum.* Willd. Sm. Hook. Grev. *L. dissectum.* With. Ed. 3 and 4. Hull. Sym. E.) Kitchen gardens and fallow fields, not unfrequent. On a bank between Pimlico and Chelsea. Curtis. (In corn-fields, near Bungay, frequent. Mr. Woodward. In great plenty at Hunnington, Suffolk; also in a field of tares at Pakenham. Rev. C. R. Leathes. In waste places about Darlington. Mr. Robson. Bowden churchyard, near Altrincham, Cheshire. Mr. H. Christy. In Anglesey. Welsh Bot. Fields near Newhaven. Grev. Edin. E.) A. April—Sept.*

L. AMPLEXICAU'LE. (Floral-leaves sessile, embracing the stem, blunt, kidney-shaped, crenate, partly lobed: teeth of the calyx linear-awl-shaped, as long as its tube. Sm. E.)

(*E. Bot.* 770. E.)—*Curt.* 109—*Kniph.* 11—*Riv. Mon.* 63. 1 *and* 2—*Fl. Dan.* 752—*Lob. Ic.* i. 463. 2—*Ger. Em.* 616. 4—*Park.* 762. 2—*Pet.* 33. 4—*H. Ox.* xi. 11. 12—*Ger.* 493. 4.

Lower-leaves on leaf-stalks, heart-shaped, blunt, deeply and bluntly serrated, the *upper* in opposite pairs, heart-shaped broad, sessile, inclosing but not embracing the stem, with five lobes; lobes scolloped, the middle one as broad again, and with three clefts at the end, the lateral ones small. Woodw. (*Calyx* thickly set with hairs: *Bloss.* fine crimson, with a long slender tube: but the early flowers rarely expand or protrude beyond the calyx, yet perfect their seeds. E.)

GREAT HENBIT. HENBIT ARCHANGEL or DEAD-NETTLE. (Welsh: *Marddanadlen gôch cylchddail.* E.) *Pollichia amplexicaulis.* Gmel. Sandy corn-fields, and cultivated ground. A. Feb.—June.

(*L. maculatum.* Under this designation we have to consider the plant figured and described in E. Bot. 2550; "Leaves heart-shaped, pointed, deeply serrated; whorls ten-flowered:" and also another variety: both having recently been admitted into the British Flora.

The former of these, originally discovered by Lady Vaughan, beside the lane leading directly from Redland Court to the garden, (close to the garden wall,) and shown by her ladyship in that station, (the only one known in these Islands,) to the Editor several years ago, has since been brought under constant observation. We have the best authority for believing this plant to be *L. maculatum* of Linnæus, though it would appear from his general description that the species so named was intended to comprehend both our varieties. It is likewise undoubtedly the *Lamium* which prevails in the south of Europe, to the exclusion of *L. album,* with which it must be allowed to stand in intimate alliance. "The whole of the plant accords much with *L. album:*" and again, "habit like that of *L. album:*" says Smith: and, (with the exception of the purple flowers, and fewer of them in a whorl,) "in other respects very like *L. album.*" Hooker. Ludwig Ect. t. 162, except in colour, well represents our plant. Rivinus describes it, but without distinguishing it, as a species, from *L. album.* It may likewise be recognized in the description of Schkuhr.

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* The young leaves both of this and the preceding species may be eaten with other pot-herbs. Goats, sheep, and horses eat it; cows refuse it. (*Phalæna chrysitis* feeds on these plants. E.)

It should be kept in mind that the tendency of *L. album* to become tinged with red, is admitted by Smith: that also in Fl. Lond. that species is stated to occur with a purple flower in the south of France: that Curtis reports having found it tinged in England: and that Linnæus himself confirms the same remark, *"Variat flore carneo."* On the other hand, Schkuhr informs us that the flowers of *L. maculatum*, usually purple, are *"sometimes pale red, or nearly white;"* and moreover, *"on the plants that bear flowers, the spotted leaves are often wanting."* The discrepancies between our numerous specimens and the proposed specific character, have rendered us in no small degree sceptical as to the possibility of establishing any such permanent distinction. The number of flowers in a whorl is far from being definite, though in general, it must be allowed, fewer than those of *L. album.* The lip of the blossom being spotted or speckled, is by no means peculiar to this kind of *Lamium.* Neither is the trivial name unexceptionable, if understood to refer to the spots on the leaves; for the foliage of this plant, described as "*guttatim dispersa,*" in Column. Ecphr. 191, is never, so far as we have observed, such as to justify the expression in E. Bot. "distinguished by *large white spots* on the *radical leaves:*" inasmuch as these marks are variable both as to duration, strength, and position, indeed equally pervading all parts of the plant, and at other seasons than those mentioned in the context; nor with us can it correctly be said "Macula foliorum alba *æstate disparet.*" Linn. In fact, on close inspection of these spots, they have always appeared to us to be occasioned, not by those less intelligible operations of nature on which depend the proper varieties of plants, but rather by some more immediate agency, and accompanied by the destruction, or abrasion, of the cuticular membrane and parenchymatous substance of the parts affected, as indicating a state of disease, or the depredations of minute *Aphides,* which may be found, though not so frequently, committing similar ravages on *L. album,* and others of this tribe. Curious specimens, as we apprehend also thus produced, have just been communicated to us, as *L. maculatum,* with leaves more or less freckled, or speckled, from Compton wood, near Bristol. But we are restrained from further digression, by a conviction that, however the Redland plant may be ultimately disposed of, it has little or no pretension to be deemed indigenous, limited as it is to the one very suspicious spot already described.

The other, and somewhat more legitimate, variety, to which we have alluded, is still more remarkable, almost every leaf being embellished throughout the year, not with "obscure scattered spots," but with a well-defined *white central line,* as though streaked with white paint: "*Foliis area longitudinali alba.*" Linn. "*L. alba linea notatum.*" Bauh. Pin. 231. This we believe to be *L. maculatum* of Flora Græca, wherein it is mentioned in contradistinction to the Redland plant. We have received it from the Chelsea Botanic Garden. It is said to have been brought thither from Edinburgh by Mr. G. Don. We are informed that it prevails in the kingdom of Leon with a white var. It is cultivated in the Scotch gardens, whence likewise we have it; but whether Dr. Hooker in Fl. Scot. intended to apply the description from E. Bot. solely to a variety similar to the one growing at Redland, (which elicited that description,) or to include our latter variety, it is to be regretted that the researches of the learned Professor should have failed to produce a single "local habitation," more satisfactory than that of "Woods in Scotland, rare." On the authority of Professor Henslow we are enabled to state that even this var. does not retain its distinctive character, and that the seedlings lose their stripes.

For a complete elucidation of these obscure points, we await the publication of M. Gingin of Bern, who has been long engaged in preparing a Monograph of this family of plants, and to whom we have submitted *specimens*. E.)

*GALEOP'SIS.** *Bloss. upper lip vaulted, somewhat scolloped; lower lip trifid, with a concave pointed tooth on each side.*

G. LA'DANUM. (Stem not swollen below the joints: leaves spear-shaped, more or less serrate, hairy: upper lip of the blossom slightly crenate. E.)

(*E. Bot.* 884. E.)—*Kniph.* 12—*Riv. Mon.* 24. 1—*Pet.* 33. 11.

Stem a foot high, upright, quadrangular, somewhat hairy, with spreading branches. *Leaves* opposite, on leaf-stalks, sometimes spear-shaped, serrated, at others very entire, taper-pointed, naked, or somewhat hairy, with three or four serratures on each edge. *Flowers* red, slightly woolly. *Blossom helmet* toothed; *lips* scolloped, the middlemost segment red and white. *Calyx* teeth taper-pointed, or thorny. Huds. (The Rev. R. Forby has found the terminal flower sometimes regularly quadrifid as in *G. Tetrahit*, and in Norfolk a variety with narrower and almost entire leaves most frequent. E.Bot. E.)

RED HEMP-NETTLE. E.) Corn-fields in calcareous soil, frequent.
A. June—Aug.

Var. 2. Calyx remarkably woolly; stems thickening upwards.

Blossoms reddish purple; upper lip oval, hairy without; lower lip reflexed, irregularly scolloped, with two oval yellow spots; teeth not observable. I suspect this will prove a different species, at least it differs from the preceding in three very striking circumstances, viz. the stem thickening upwards, the great woolliness of the calyx, and the blossoms being larger though shorter.

In a corn-field two miles west of Stratford-upon-Avon, near a limestone quarry. (On limestone hills at Fulwell, near Sunderland. Winch Guide. At the foot of Scoot Scar, near Kendal, and Giggleswick Scar, near Settle. Mr. Gough. E.)
A. Sept.

(G. VILLO'SA. Stem not swollen below the joints: leaves egg-spear-shaped, serrated, soft and downy: upper lip of the blossom deeply notched. E.)

Dicks. H. S.—(*E. Bot.* 2353—*Riv. Mon.* 24. 2. E.)—*Pet.* 33. 10.

Stem upright, quadrangular, of equal thickness between each joint; branching, woolly. *Leaves* woolly, or silky, on leaf-stalks, opposite; those near the root egg-shaped, those of the stem spear-shaped, taper-pointed, with straight veins. *Calyx* teeth thorny. In habit it agrees with *G. Ladanum*, but differs in breadth, serratures, veins and soft hairs of the leaves, and in the colour of the blossoms. Huds. The hairs on the calyxes in this species are straight and glandular, but in the preceding white, and curled like wool or cotton. (*Blossom* four times as long as the calyx, of a pale sulphur colour, the palate deep yellow. E. Bot. E.)

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* (From γαλη, a cat; and οψις, a countenance; from an imaginary resemblance of the blossom to the feline physiognomy. E.)

(Downy Hemp-nettle. *G. grandiflora.* Gmel. Willd. With. to Ed. 7. E.) *G. villosa.* Huds. Sm. Dicks. Sandy corn-fields, Yorkshire and Lancashire. Near Newark, and about Bangor. Hudson. A. July—Aug.

G. TETRA'HIT. (Stem bristly, swollen below each joint: blossom twice as long as the calyx: upper lip nearly straight. E.)

(*Hook. Fl. Lond.* 191. E.)—*Riv. Mon.* 31, *Cannab. spur*—*E. Bot.* 207—*Kniph.* 8—(*Fl. Dan.* 1271. E.)—*Dod.* 153. 4—*Lob. Ic.* i. 527. 2—*Ger. Em.* 709. 2. *a*—*Ger. Em.* 709. 1—*Ger.* 573—*Pet.* 33. 8.

Blossom generally purplish, (nearly three-fourths of an inch long; lower-lip three-lobed, mottled, with darker lines in the middle; tube white, E.) sometimes white, in numerous dense whorls. *Calyx*, teeth terminated by sharp awns as long again as those of *G. Ladanum.* Woodw. (*Upper-lip* always narrower and flatter, nearly erect; in the following species, broader, more convex, and bends down more over the tube of the corolla. Fl. Lond. *Stem* covered with strong bristles, quadrangular, one to two feet high. *Leaves* rather large, ovate, hispid on both sides.

Var. 2. Blossoms white, and much larger than those of the preceding.

Cannabis spuria flore albo magno eleganti. R. Syn. 240.

Var. 3. Terminal flower regularly salver-shaped, with four equal stamens.

Observed by Dr. Smith at Matlock in 1788. See E. Bot. 207. Linn. Fl. Lapp. Ed. 2. 201.

In all these Varieties the leaves are egg-spear-shaped, and only the upper parts of the stem and branches are hairy.

Common Hemp-nettle. (Nettle-hemp. Welsh: *Penboeth gyffredin.* E.) Hedge-banks, borders of corn-fields, and amongst rubbish.
A. July—Aug.

G. (VERSI'COLOR. Stem hispid, swollen below each joint: blossom thrice as long as the calyx: upper lip tumid; middle lobe of the lower heart-shaped. E.)

(*Curt.*—*E. Bot.* 667. E.)—*Riv. Mon.* 32, *Cannab. spur. fl. maj.*—*Fl. Dan.* 929—*Barr. Ic.* 1158—*Lob. Ic.* i. 527. 3—*Ger. Em.* 709. 2. *b.*—*Park.* 599. 1—*Pluk.* 41. 4.

(In general habit resembling *G. Tetrahit*, but larger in all its parts. E.) *Stem* and branches very hairy in every part. *Leaves* paler green and more hairy underneath than the last. *Calyx* purplish red. *Blossom* about one inch long, pale yellow; lower lip deep yellow, its middle segment purple, bordered with white. The seeds produced similar plants year after year, and the beauty of its blossoms might challenge a place in the flower garden.

It varies in having the leaves broad and egg-spear-shaped, or narrower and spear-shaped.

(Bee-nettle. Large-flowered Hemp-nettle. *G. versicolor.* Curt. Sm. Hook. Purt. Grev. *G. cannabina.* Oed. With. Willd. *G. Tetrahit* β. Linn. Lightf. Huds. E.) Hedges at Kirkby in Furness, and in fallow ground, near Hutton Roof, Westmoreland. Mr. Atkinson. (Plentiful near Norwich, and at Watlington, Norfolk; also about Moffat and near Edinburgh. Sir J. E. Smith. Observed by Sir T. G. Cullum at Gretna Green very abundant. Fl. Brit. Melrose, Scotland, and Jesmond near Newcastle. Mr. Winch. In corn-fields about Bingley and Keighly. Whitaker's Craven. Corn-fields about Congleton, Stockport, and Chester. Mr. W. Christy. On the coast north of Oban. Dr. Bostock. Common about Edinburgh. Greville. E.) Moist corn-fields' in a gravelly soil, and under a moist hedge at Birches Green, near Birmingham.

A. July—Aug.[*]

GALEOB'DOLON.[†] *Bloss.* upper lip entire, vaulted; lower lip without teeth, in three acute, undivided segments: *Anthers* fleshy on the back.

G. LU'TEUM.

Curt. 223—*E. Bot.* 787—*Walc.*—(*Fl. Dan.* 1272. E.)—*Dod.* 153. 3—*Lob. Ic.* i. 521. 1—*Ger. Em.* 702. 2—*Park.* 606—*H. Ox.* xi. 11. 5—*Pet.* 33. 6—*Riv. Mon.* 20. 2, *Lam. fl. lut.*—*Kniph.* 3—*Ger.* 567. 2—*J. B.* iii. 323. 1.

(*Stem* one foot to eighteen inches high, simple, leafy, hairy, quadrangular, striated. *Blossom* yellow; middle segment of the lower lip orange marked with three lines; and spotted. *Floral-leaves* bristle-shaped, one at the base of each flower. E.) *Leaves* spear-shaped, on leaf-stalks, unequally serrated, hairy, especially at the edges, lower ones nearly heart-shaped. *Whorls*, the uppermost with six flowers, the rest with from seven to ten. *Involucrum* leaves growing to the base of the calyxes. *Anthers* fleshy or glandular on the back part. *Seeds* oblong, convex on the outer side, triangular on the inner.

YELLOW ARCHANGEL or DEAD-NETTLE. (*G. luteum.* Huds. With. Sm. Hook. *G. galeopsis.* Curt. *Leonurus Galeobdolon.* Willd. *Lamium luteum.* R. Syn. E.) *Galeopsis Galeobdolon.* Linn. Oed. Lightf. *Pollichia Galeobdolon.* Gmelin, who includes under his genus *Pollichia* the *Lamium amplexicaule*, but that has teeth on the side of the blossom, and the name *Pollichia* had before been given to another plant. Woods, shady places, and moist hedges. Bath Hills, near Bungay; and woods, Norfolk. Mr. Woodward. Hedges near Malvern Chase. Mr. Ballard. (About Dorking, and Matlock. Mr. Winch. Bradley woods, near Newton, Devon; and near Mirables, Isle of Wight. Mr. Fred Russell. In Belbank wood near Bingley. Whitaker's Craven. In sandy soil frequent, in Kent. Mr. G. E. Smith. Stockwood lanes, Keynsham, Somersetshire; Staffordshire and Warwickshire, not uncommon. E.)

P. May.

Sir T. G. Cullum mentions, in Bot. Guide, a curious and elegant variety with the blossom, or at least the terminal flower, flat, and six-cloven, growing for many years in a lane near the Grove at Hardwick, one mile and a half from Bury. E.)

BETON'ICA. *Calyx* awned: *Bloss.* upper lip upright, flat: *Tube* cylindrical, incurved: *Stamens* not longer than the mouth of the tube.

B. OFFICINA'LIS. Spike interrupted: middle segment of the lower lip notched.

Ludw. 2—*Curt.* 154—*Kniph.* 5 *and* 11—(*E. Bot.* 1142. E.)—*Riv. Mon.* 28, *Betonica.*—*Woodv.* 244—*Walc.* 5—*Ger.* 577. 1—*Blackw.* 46—*Sheldr.* 36—*Fl. Dan.* 726—*Lonic.* i. 138. 1—*Tourn.* 96—*Clus.* ii. 89. 1—*Dod.* 40. 1—*Lob. Obs.* 286. 4, *and Ic.* i. 532. 2—*Ger. Em.* 714—*Park.* 614. 1—*H.*

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[*] (Several species of this genus yield a fibre worthy of being manufactured as hemp. E.)

[†] (From γαλη, a cat; and βδολος, a fetid scent; descriptive of its strong smell. E.)

Ox. xi. 5. *row* 1. 1. *f.* 1—*Pet.* 32. 6—*Fuchs.* 351—*Trag.* 198—*J. B.* 301—*Matth.* 944—*Ger.* 577. 2.

Stems leafy, one to two feet high, square, hairy. *Root-leaves* oblong-heart-shaped, scolloped, hairy, on long leaf-stalks. *Stem-leaves* distant, spear-shaped, serrated. Woodw. *Stem-leaves* more strap than spear-shaped. *Hairs* on the stem laid flat and pointing downwards. *Blossom* purple, (or dull rose-colour, rarely white, downy. The *leaves* are often discoloured by dots occasioned by a minute *Lycoperdon.* E.)

WOOD BETONY. (Welsh: *Cribau St. Fraid; Dannogen.* E.) Woods and shady groves. Plentiful about Manchester, both in shady and exposed places. Mr. Caley. Meadows in St. Faith's, near Norwich. Mr. Crowe. Ripton, Huntingdonshire; pastures, Herts. Mr. Woodward. (Hollington, near Hastings. Dr. Bostock. Collington and Auchindenny woods. Maughan. Hook. [illegible]ot. E.) P. July—Aug.*

STA'CHYS.† *Bloss.* upper lip vaulted; lower lip reflexed at the sides; middle segment notched: *Stamens* after shedding the pollen bent to the sides.

S. SYLVAT'ICA. Six flowers in a whorl: leaves heart-shaped, stalked.

Curt. 183—(*E. Bot.* 416—*Fl. Dan.* 1102. E.)—*Riv. Mon.* 26. 2—*Stachys sylvaticæ.*—*Blackw.* 84. 2—*Clus.* ii. 36. 1—*Ger. Em.* 704. 5—*Park.* 908. 1—*H. Ox.* xi. 11. 10—*Pet.* 32. 7—*Trag.* 5—*Lonic.* i. 109. 3—*Blackw.* 84. 1.

(*Herb* hairy all over. *Stems* undivided, two feet high, solid. *Spike* interrupted, leafy at the base, bearing floral-leaves towards the top. Fl. Brit. E.) *Floral-leaves* spear-shaped, acuminate. *Blossoms* deep purple with white spots. *Tube* of the blossom much longer than the calyx.

(Var. 2. *S. ambigua.* E. Bot. 2089 seems chiefly distinguished by a hollow stem, according to Smith, leaves less decidedly heart-shaped, and paler herbage.

Woods at Inverary. Maughan. Orkneys, and in Ross-shire. Hooker. Habbies How, Pentland Hills. Mr. Weatherhead. By the London road, about a furlong north of Quorndon, also at Sheepshead, Leicestershire. Rev. W. Parkinson. Sm. Eng. Fl. By the Skern, near Burdon mill, Durham. Mr. Winch. E.)

Var. 3. Smaller leaves angular.

HEDGE WOUNDWORT. (Welsh: *Briwlys y goedwig.* E.) Hedges and woods. P. July—Aug.‡

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* (This plant was formerly much used in medicine, and considered an universal remedy, but it is discarded from modern practice; perhaps merely from the disappointment of unreasonable expectation. Antonius Musa, physician to the Emperor Augustus, introduced it into such general repute in Italy, that "Vende la tonica, et compra la Betonica," sell your coat and buy *Betony*, became a prevalent proverb. Fernelius and Pliny likewise extol its virtues; and in Spain, of the superlatively excellent it is said, "She has as many virtues as *Betony.*" E.) It is not destitute of virtues, for when fresh it intoxicates, and the dried leaves excite sneezing. It is often smoked as tobacco. The root promotes vomiting, (and is violently purgative. E.) Sheep eat it. Goats refuse it. (It has been suspected that the sternutatory effect is merely mechanical, occasioned by the hairs of the leaves. It enters into the composition of Rowley's British herb tobacco and snuff. E.)

† (From σταχυς, a spike, or ear of corn; the flowers affecting that form. E)

‡ It will dye yellow. The whole plant has a fetid scent, and toads are thought to be

S. PALUS'TRIS. Six to ten flowers in a whorl: leaves strap-spear-shaped, half embracing the stem, sessile.

Curt. 208—(*E. Bot.* 1675—*Fl. Dan.* 1103. E.)—*Kniph.* 7—*Riv. Mon.* 26. 1, *Stachys palustris.*—*Sheldr.* 45—*Ger.* 565. 2—*Ger. Em.* 1005—*Blackw.* 273—*Ger.* 852—*Park.* 852—*Pet.* 33. 9.

(*Roots* creeping, becoming tuberous in autumn, and hence difficult of extirpation. Sm. E.) *Stems* quadrangular, rough with hairs pointing downwards. *Leaves* in opposite pairs, very soft, unequally serrated, spreading half way round the stem. *Floral-leaves,* two small ones under each whorl. *Calyx* purple, beset with fine hairs terminating in small globules. *Blossom* reddish purple, mottled; tube white; mouth compressed; upper lip, and all the segments of the lower lip, slightly notched at the end. (*Spike* long and dense, herbage strong-scented. E.)

ALL-HEAL. (MARSH WOUNDWORT. Irish: *Cuslin gan Dauri.* Welsh: *Briwlys y gors.* E.) Watery places and banks of rivers. P. Aug.*

S. ARVEN'SIS. Six flowers in a whorl: leaves heart-shaped, crenate, blunt, almost naked: blossoms as long as the calyx: stem weak.

Curt. 246—(*E. Bot,* 1154. E.)—*Fl. Dan.* 587—*Riv. Mon.* 27. 2, *Stachys arv. min.*—*Pet.* 33. 12.

Stem twelve to eighteen inches high, quadrangular, blunt, with spreading branches, sometimes decumbent; rough with hair. *Leaves* much less hairy than the stem. *Leaf-stalks* hairy. *Calyx* sessile, hairy, with five equal, sharp-pointed, shallow clefts. *Blossom* whitish, or flesh colour, scarcely so long as the calyx; helmet very entire; lip trifid, the middle one the broadest, purplish, dotted, not notched.

CORN WOUNDWORT. (Welsh: *Briwlys yr âr.* E.) In corn-fields, (not uncommon. E.) A. June—Aug.

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fond of living under its shade; (rather, as in some other instances, from the moisture of such spots, than from any peculiar predilection in the reptile for disagreeable smells. E.) Sheep and goats eat it. Horses, cows, and swine refuse it. (Mr. Purton suggests that, with many others of this Class, it may be converted to the same purposes as hemp [illegible] flax. E.)

* (A plant formerly in high repute as a vulnerary, as its English names intimate. For a curious account of its problematical virtues refer to Gerard. In a sceptical age, little credit is given to the accounts transmitted by our forefathers of the wonder-working efficacy of various native herbs; and the plants are therefore rather too unceremoniously cast aside. Doubtless many of them merit more strict attention, and that they and their reported virtues may not be wholly lost sight of, it is still important to discriminate them by their more ancient or vulgar names. Nor were these, to the confiding patients, devoid of comfort: for, as it is pleasantly observed in the Journal of a Naturalist, "modern science may wrap up the meaning of its epithets in Greek and Latin terms; but what pleasure it must have afforded the poor sufferer when the good neighbour came to bathe his wounds, or assuage his inward torments, with such things as "All-heal, Break-stone, Bruise-wort, Gout-weed, Fefer-few" (*fugio*), and twenty other such comfortable mitigators of his afflictions; why, their very names would almost charm away the sense of pain! And then the herbalist of old professed to have plants which were "All-good;" they could assuage anger by their "Loose-strife;" they had "Honesty, True-love, and Hearts-ease." The extra tropical condiments of these days were not required, when the next thicket would produce "Poor Man's Pepper, Sauce Alone, and Hedge Mustard;" and the woods and wilds around, when they yielded such delicate viands as "Fat-hen, Lambs'-quarters, Way-bread, Butter and Eggs, with Codlins and Cream," afforded no despicable bill of fare. The terms of modern science fluctuate daily; names undergo an annual change, fade with the leaf, and give place to others; but the ancient terms, which some may ridicule, have remained for centuries, and will yet remain till nature is swallowed up by art." E.)

S. Germanʹica. Many flowers in a whorl: serratures of the leaves lapping over each other, densely silky: stem cottony.

Jacq. Austr. 319—*Kniph.* 10—(*E. Bot.* 829. E.)—*Riv. Mon.* 27. 1, *Stachys mont.*—*Fl. Dan.* 684—*Barr. Ic.* 297—*Fuchs.* 766—*J. B.* iii. 320—*Trag.* 9. 1—*Lonic.* i. 110. 1—ii. 30. 4—*Ger.* 563. 2—*Matth.* 830—*Dod.* 90. 3—*Lob. Obs.* 285. 4, *and Ic.* i. 530. 2—*Ger. Em.* 695. 2—*Park.* 48. 2—*H. Ox.* xi. 10. 1.

Whole *plant* white with a thick silky down. *Lower-leaves* heart-spear-shaped; *upper* spear-shaped, wrinkled, sharply serrated. *Blossom,* lip covered with down. Woodw. *Leaves* thick, soft and cloth-like. *Blossom* purplish red.

(Hoary or Downy Woundwort. E.) German Woundwort. Hedges about Witney Park, Oxfordshire, plentiful, and four miles south of Grantham, near the London road, opposite Easton. Frequent in Oxfordshire. Mr. Newberry. Between Blenheim and Ditchley. Mr. Woodward. (Pinxton, Derbyshire. Mr. Coke, in Bot. Guide. Near Olney. Mr. W. Christy. E.) P. July.*

BALLOʹTA.† *Calyx* salver-shaped, with five teeth and ten furrows: *Bloss.* upper lip concave, crenate.

B. Niʹgra. Leaves heart-shaped, undivided, serrated: calyx (somewhat truncated, with short spreading segments. E.)

Kniph. 6—*Blackw.* 136—*E. Bot.* 46—*Fuchs.* 154—*J. B.* iii. 318. 1—*Riv. Mon.* 65. 1, *Marrubiastr.*—*Matth.* 825—*Clus.* ii. 34. 1—*Dod.* 90. 1—*Lob. Obs.* 279. 1, *and Ic.* i. 518, 2—*Ger. Em.* 701. 1—*Park.* 1230. 3—*H. Ox.* xi. 9. 14—*Pet.* 32. 4.

(Whole *plant* pubescent, with a pungent, acrid odour. *Stem* two or three feet high, upright, branched, with hairs reflexed. E.) *Lower leaves* heart-shaped, upper ones egg-shaped. *Floral-leaves* bristle-shaped, fringed. *Whorls* extending half way round the stem. *Calyx* hairy, rim five-cornered; teeth ending in sharp bristle-shaped points. *Blossom tube* containing honey, closed above by five hairy tufts; *upper lip* hairy, not very entire, purple, variegated with white lines. The *calyx* attaining its full size long before the blossoms expand, the latter appear as if already fallen off, though, on examination, they will be found at the bottom of the cup.

Black Horehound, or Henbit. (Welsh: *Mardʹdynad ddu.* E.) On rubbish and in hedges, common. P. July—Aug.‡

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* (Certain species of Bees, with their mandibles, industriously scrape off the soft woolly material afforded by these plants, and rolling it into little balls with their fore legs, convey it to their nests, and closely envelop the cells with a coating impervious to every change of temperature.—Thus may instinct often afford instruction to reason: and the contemplation of the minute insect, infinitely disproportionate as the little creature is to our own powers and faculties, is calculated to elevate the reflecting mind to that source of all wisdom, which we cannot penetrate, and which surpasses human conception. Whatever God has created must be worthy the respect and consideration of man: and the more intimately we become acquainted with His works, the more ready shall we be to admit

"The hand that made them is divine." E.)

† (From βαλλω, to cast off, thrust out, or purify, as a deobstruent. E.)

‡ It is recommended in hysterical cases. The Swedes reckon it almost an universal remedy in the diseases of their cattle. Horses, cows, sheep, and goats refuse it. (*Apnon*

Var. 2. Blossoms white, with a tinge of red. *B. alba* of Linn.
(*Cam. Epit.* 572. E.)

Near Hammersmith, on the road side. Mr. Woodward. Norwich. Mr. Crowe. Stafford. Dr. Stokes. (Near Hartlepool. Mr. Winch. In the lane leading from the Camp ground to Cheriton Street, near Sandgate. Mr. G. E. Smith. E.)

MARRU'BIUM.* *Calyx* salver-shaped, rigid, with ten furrows: *Bloss.* upper lip cloven, strap-shaped, straight.

M. **VULGA'RE.** Teeth of the calyx ten, bristle-shaped, hooked: (leaves roundish-ovate, serrated, rugose. E.)

(*E. Bot.* 410. E.)—*Fl. Dan.* 1036—*Ludw.* 145—*Riv. Mon.* 66. 1, *Marrubium alb.*—*Blackw.* 479—*Ger.* 561. 1—*Fuchs.* 590—*J. B.* iii. 316—*Matth.* 828—*Lonic.* i. 110. 2—*Trag.* 8. 2—*Clus.* ii. 34. 1—*Dod.* 87. 1—*Lob. Obs.* 278. 3, *and Ic.* i. 517. 2—*Ger. Em.* 693. 1—*Park.* 44—*Pet.* 32. 3—*H. Ox.* xi. 9. *row.* 3. 1.

Whole *plant* hoary with pubescence. *Stem* bluntly quadrangular, branching from the bottom, one to two feet high. *Lower-leaves* roundish, wrinkled, with thick veins and woolly beneath. *Upper-leaves* somewhat egg-shaped. *Calyx* woolly, fringed on the inside at the bottom of the teeth with soft hairs. *Blossoms* nearly white, small, compressed, in crowded whorls; upper lip spear-shaped; lower lip, middle segment slightly scolloped, lateral segments spear-shaped, short. *Anthers* with a black substance in the middle.

WHITE HOREHOUND. (Irish: *Orafunt.* Welsh: *Perchwerwyn; Llwyd y cwm.* πράσιον, (*Prasium,*) of the old medical writers. E.) Road sides, and amongst rubbish. P. July—Sept.†

LEONU'RUS.‡ *Anthers* incumbent, sprinkled with shining particles: (upper lip of the *blossom* shaggy. E.)

L. **CARDI'ACA.** Stem-leaves spear-shaped, three-lobed: (upper ones entire or nearly so. E.)

Kniph. 4—*Ludw.* 5—*Fl. Dan.* 727—*Riv. Mon.* 20. 1, *Cardiaca.*—*Blackw.* 171—*E. Bot.* 286—*Dod.* 94—*Lob. Obs.* 278. 1, *and Ic.* i. 516. 1—*Ger. Em.* 705—*Park.* 42. 7—*Ger.* 569—*Fuchs.* 395—*Lonic.* i. 110. 3—*H. Ox.* xi. 9. 18.

(*Stem* two or three feet high, quadrangular, coloured, downy. *Leaves* numerous, on leaf-stalks, woolly and veined underneath. *Whorls* many

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(*Curculio*) *vernale* feeds principally on this plant; though sometimes on *Urtica dioica* or *Lamium album.* Kirby. E.)

[*] (From a town of that name in Italy, where it abounds. E.)

[†] It is very bitter to the taste, and not altogether unpleasant to the smell. It was a favourite medicine with the ancients in obstructions of the viscera. It large doses it proves cathartic. It is a principal ingredient in the Negro Cæsar's remedy for vegetable poisons. A young man, who had occasion to take mercurial medicines, was thrown into a salivation which continued for more than a year. Every method that was tried to remove it, rather increased the complaint. At length Linnæus prescribed an infusion of this plant, and the patient got well in a short time. Horses, cows, sheep, and goats refuse it. (A tea prepared from it, sweetened with honey, is an excellent domestic medicine in coughs and obstructions of the lungs. E.)

[‡] (From λεων, a lion; and ȣρα, a tail; from some fancied resemblance thereto. E.)

flowered. Cal. with sharp spreading teeth. E.) Flowers purplish within, white and downy on the outside. *Anthers* brown, partly covered on the outer side with white opaque globules which look like enamel, but are not of a bony hardness.

MOTHERWORT. (LION'S-TAIL. Welsh: *Mamlys; Llys y fammog.* E.) Hedges, on rubbish and waste spots. (Between Tickhill and Worksop. Hudson. In a lane near Combe Wood, Surry. Mr. Sowerby. Near Wycliffe. Mr. Winch. King's Coughton, Warwickshire; and near Malvern. Purton. On the Point, near Beaumaris. Welsh Bot. E.) Ditchingham, Norfolk, in a hedge, and on an adjoining bank, in a gravelly soil. Mr. Woodward. At North Bovey, and Kennock-kiln, near [illegible]on-Teign, Devon. Rev. J. Pike Jones. In a shady walk behind Fisherrow, and in Collington woods, Edinburgh. Maughan. Hook. Scot. E.) P. June - Aug *

CLINOPO'DIUM.† *Stamens* crooked: *Anthers* approaching: *Involucr.* many-bristled, inclosing the ribbed calyces.

C. VULGA'RE. Heads roundish, hispid: floral-leaves bristle-shaped.

Fl. Dan. 930—*Kniph.* 11—(*E. Bot.* 1401. E.)—*Clus.* i. 354. 2—*Lob. Obs.* 269. 2—*Ic.* i. 504. 2—*Ger. Em.* 675. 2—*Park.* 22. 4—*H. Ox.* xi. 8. *row* 1. 1—*Pet.* 32. 9—*Riv. Mon.* 43. 1, *Clinopodium*—*Trag.* 36. 2—*Lonic.* i. 118. 1—*Matth.* 814—*Lonic.* ii. 21. 1.

(*Blossom* on branched stalks, purplish red, with a yellow protuberance on each side of its mouth. *Tube* long; *upper lip* notched, *lower* crenate. Whole *plant* hairy. *Calyx* with thirteen scores. *Whorls* few. *Stems* square, hairy, reddish, twelve to eighteen inches high. *Leaves* egg-shaped, serrated, sometimes nearly entire, on short leaf-stalks. Smell aromatic. E.)

WILD BASIL. (Welsh: *Breninllys gwyllt.* E.) Meadows, hedges, and dry pastures, especially in calcareous soil. P. July.

ORIG'ANUM. (*Calyx* without ribs: *Involucrum* of numerous dilated, flat leaves, with the flowers forming a spikate, quadrangular cone. E.)

O. VULGA'RE. Spikes roundish, panicled, clustered: floral-leaves egg-shaped, longer than the calyx.

(*E. Bot.* 1143. E.)—*Kniph* 4—*Ludw.* 90—*Curt.* 338—*Woodv.* 164—*Riv. Mon.* 60. 1, *Origanum.*—*Ger.* 541. 4—*Matth.* 1701—*Dod.* 285. 2—*Lob. Obs.* 263. 1, *and Ic.* i. 492. 2—*Ger. Em.* 666. 4—*Park.* 12. 6—*H. Ox.* xi. 3. 12—*Pet.* 34. 8—*Blackw.* 280—*Fuchs.* 552—*J. B.* iii. 236—*Trag.* 36. 1—*Lonic.* i. 118. 2—*Fl. Dan.* 638.

Stem a little woolly, about a foot high, often coloured. *Leaves* egg-heart-shaped, very slightly serrated, opposite, dotted, more or less hairy. *Floral-leaves* spear-shaped, coloured. *Calyx* nearly equal; mouth closed with bristly hairs, which at first lie parallel to the sides, but when the blossom falls off they stand out closing up to the mouth; without beset

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* The leaves have a strong but not an agreeable smell, and a bitter taste. Goats, sheep, and horses eat it. Cows are not fond of it. Swine refuse it.

† (From κλινη, a couch; and ποδιων, a little foot; the flowers growing in whorls, resembling the ancient turned feet of bedsteads. E.)

with short fine hairs, and minute white shining globules. *Blossoms* pale red, hairy; the middle segment rather longer than the rest. *Stamens* as long, or longer than the blossom, but in some specimens they are shorter, and then the anthers appear to be destitute of pollen.

Var. 2 Leaves egg-spear-shaped.

Lob. Obs. 264. 2—*Ic.* i. 494. 2—*Ger. Em.* 664. 2—*Park.* 12. 4—*H. Ox.* xi. 3. 9.

(Commonly cultivated in gardens, and erroneously supposed to be *O. Onites* of Linnæus; can scarcely be esteemed a native of Britain. E.)

WINTER MARJORAM. WILD OR FIELD MARJORAM. (Welsh: *Meswuad cyffredin; Penrudd.* E.) Thickets and hedges, in calcareous soil. Catton, near Norwich. Mr. Woodward. In a wood near Cartmell Wells. Mr. Atkinson. Clapham, Yorkshire. Mr. Caley. (In Anglesey. Welsh Bot. Banks of the Water of Leith. Mr. Neill. Grev. Edin. Plentiful by the road side approaching Clevedon from Bristol, within a short distance of the former place. In the lanes, and on the banks of the river, about Teignmouth. Frequent by the road side about Mirables, and Undercliff, Isle of Wight. On chalky soil in the neighbourhood of Dover. E.) P. July—Aug.*

THYMUS.† *Calyx* bilabiate, mouth closed with soft hairs.

T. SERPYL'LUM Flowers in small heads: stems decumbent: leaves flat, blunt, ovate, entire, fringed at the base.

Knorr 5—(*Fl. Dan.* 1164—*E. Bot* 1514. E.)—*Ludw.* 121—*Vaill.* 32. 9 *and* 7—[illegible] *Clus.* i. 359 1—*Dod.* 277. 1—*Lob. Obs.* 230. 2, *and Ic.* i. 423. 2—*Ger. Em.* 570. 1—*Park.* 8. 10—*Pet.* 31. 1—*H. Ox.* xi. 17, *row* 1. 1—*Fuchs.* 251—*J. B.* iii. 269—*Blackw.* 418—*Matth.* 725—*Riv. Mon.* 42. 2 *Serpyll* [illegible]—*Ger.* 455. 1 *and* 2—*Lonic.* i. 119. 1.

Filaments of different lengths. *Stems* woody, nearly cylindrical, often reddish, slender, three or four inches long: more when drawn up by other plants. *Leaves* oblong-egg-shaped, very entire, with hollow dots on both surfaces, fringed at the base with a few fine white hairs. *Calyx* coloured with a circle of white hairs round the inside at the base of the segments, which, while the plant is in flower, lie flat to the sides of the calyx, but when the blossom falls off close up its mouth. *Blossom* purplish red, (small, middle segment entire. E.)

MOTHER OF THYME. WILD THYME. (Welsh: *Gruwlys gwyllt.* Gaelic: *Lus-mhic-ri-Breatuinn.* E.) Heaths and mountainous places. P. July—Aug.‡

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* The whole plant is a warm aromatic. The dried leaves, used instead of tea, are exceedingly grateful, and a good stomachic; the essential oil is so acrid, that it may be considered as a caustic, and is much used with that intention by farriers. (It is sometimes added to beer to render it more piquant, and to prevent its turning sour. E.) A little cotton wool moistened with it, and put into the hollow of an aching tooth, frequently relieves the pain. The tops dye purple. Goats and sheep eat it. Horses are not fond of it. Cows refuse it.

† (From θυω, to perfume; alluding to its fragrance, which induced its adoption in heathen rites. E.)

‡ The whole plant is fragrant, and yields an essential oil that is very heating. An infusion of the leaves removes the head-ach occasioned by excess. (It was among the wholesome herbs provided by Thestylis. Virg. Ec. 2.

"Allia, Serpillumque, herbas contundit olentes."

It is subject to considerable variations, the principal of which are:

Var. 2. *Fl. alb.* Huds. Blossoms white.

Thyme delights in dry, upland spots, such as may generally be deemed most healthful—hence Dr. Armstrong considers its prevalence as an index to the most desirable situations for building:

> —— "Mark where the dry champaign
> Swells into cheerful hills; where Marjoram
> And *Thyme*, the love of bees, perfume the air:
> There bid thy roofs high on the basking steep
> Ascend: there light thy hospitable fires." E.)

A general opinion prevails, that the flesh of sheep, or deer, that feed upon aromatic plants, particularly upon Thyme, is much superior in flavour to common mutton; but Mr. Bowles, the ingenious author of the account of the Sheep-walks in Spain, (Gent. Mag. 1764), considers this as a vulgar error. He says, sheep are not fond of aromatic plants; that they will carefully push aside the Thyme to get at the grass growing beneath it; and that they never touch it, unless when walking apace, and then they will catch at any thing. The attachment of bees to this and other aromatic herbs is well known. (It was even customary among the ancients to render the hives more agreeable by rubbing them with such as

> ——— "L'umile Serpillo,
> Che con mille radici attorte e crespe
> Sen va carpon vestando il terren d'erba,
> E la Mélissa ch'odor sempre esala;
> La Mammola, l'Origano, et il *Timo*,
> Che natura creò per fare il mele." Rucellai.

Before the substitution of the produce of the Sugar-cane, honey was a far more important requisite in domestic economy than latterly, and Thyme was then extensively cultivated for the encouragement of bees:

> "Here their delicious task the fervent bees,
> In swarming millions, tend: around, athwart,
> Thro' the soft air, the busy nations fly,
> Cling to the bud, and, with inserted tube,
> Suck its pure essence, its ethereal soul:
> And * * * * soaring dare
> The purple heath, or where the *Wild Thyme* grows,
> And yellow load them with the luscious spoil." Thomson.

And thus does a brother poet delicately compliment the amiable Shenstone, who, in his admired retreat, omitted no suitable accompaniment:

> "He cultur'd his *Thyme* for the bees,
> But never would rifle their cell." Cunningham.

A salutary caution may be here given, that honey often becomes powerfully impregnated with the quality of the plants from which it is extracted. It is important, therefore, cautiously to exclude deleterious herbs from the apiarian territory; serious, and even fatal, indispositions have been thus occasioned; and Dr. Barton records (in the American Phil. Tr. vol. v.) an extensive mortality which occurred near Philadelphia, in 1790, solely attributable to the use of honey obtained from *Kalmia latifolia*. Even mead thus incautiously prepared may produce calamitous results. It is on record that the Greeks, on their retreat after the death of the younger Cyrus, found a kind of honey at Trebisond, which proved so intoxicating that they lay on the ground as though completely discomfited. Pliny names this pernicious honey *Mænomenon*, and supposes it to have been collected from a species of Rhododendron.—According to entomologists, when the stomach of a bee is filled with nectar, it next, by means of the feathered hairs with which the body is covered, pilfers from the flowers the fertilizing dust (pollen) of the anthers; which is equally necessary to the society with honey, and may be named the ambrosia of the hive, since from it the bee-bread is made.—On this curious subject Aristotle stated, and some moderns have remarked, that instinct teaches the bee that grains of pollen that enter into

Var. 3. *Fl. amplo.* Huds. Blossoms large.

Vaill. 32. 8—*Riv. Mon.* 42. 3, *Serpyllum.*—*Pet.* 31. 2.

Serpylli vulgaris secundum genus. R. Syn. 230—*Serpyll. vulg. flore amplo.* Vaill.

Var. 4. *Latifol.* Linn. Larger. Leaves broad.

Ger. 456. 3—*Lob. Ic.* i. 424. 1—*Ger. Em.* 573. 7—*Park.* 7. 7—*Pet.* 31. 3—*Ger. Em.* 570. 3.

Okey Hole, Somersetshire.

Serpyllum vulgare majus. R. Syn. 231.

Var. 5. *Citratum.* *Lemon Thyme.* Leaves with the scent of lemon peel.[*]

Clus. i. 359. 2—*Dod.* 277. 2—*Ger. Em.* 571. 7—*Park.* 8. 9—*J. B.* 270. 1—*Ger.* 458. 2—*Pet.* 31. 4.

Var. 6. *Foliis nudis.* Leaves narrow, smooth.

Sheldr. 52—*Woodv.* 110.

Boxley Hill, by Kitt's Coffee-house.

Var. 7. *Incanus.* Leaves hoary. Ray.

Vaill. 32. 6—*Riv. Mon.* 42. 1, *Serp. mont. hirsut.*

Gogmagog Hills, and other barren places.

Var. 8. *Fruticosus.* More shrubby: hairy. Blossoms pale red. Ray.

Pastures on the summit of y Wyddfa, on Snowdon, Carnarvonshire.

Var. 9. *Inodorum.* Hairy, small, creeping, scentless. Pluk.

Serpyllum hirsutum minus repens inodorum. R. Syn. 231.

Ireland.

T. A'CINOS. Flowers in whorls, one upon each fruit-stalk: stems upright, somewhat branched: leaves acute, serrated.

Dicks. H. S.—*Curt.*—(*E. Bot.* 411. E.)—*Kniph.* 8—*Riv. Mon.* 43. 2, *Acinos.*—*Clus.* i. 354. 1—*Dod.* 280—*Lob. Obs.* 270. 2, *and Ic.* i. 506. 1—*Ger. Em.* 675. 1—*Park.* 21. 1—*H. Ox.* xi. 18, *row* 1. 1—*Pet.* 32. 10—*Fuchs.* 896—*J. B.* iii. 259—*Lonic.* i. 116. 3—*Fl. Dan.* 814—*Trag.* 37—*Ger.* 548. 1—*Matth.* 815.

(*Plant* fragrant, aromatic. E.) *Stems* ascending, about a span high. *Leaves* in distant pairs. Woodw. *Plant* hairy. *Calyx* scored, protube-

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the same mass should be homogeneous; and thus, it is supposed, "Providence secures both the impregnation of those flowers that require such aid, by the bees passing from one to another; and avoids the production of hybrid plants, from the application of the pollen of one kind of plant to the stigma of another." E.) Swine refuse it. (Cattle in general avoid it. E.) *Phalæna papilionariæ* lives upon it. (The cottony galls observable on this plant are attributable to a species of *Tephritis*; and occasion the woolly appearance, "capitulis tomentosis," Linn. and to which, from the same cause, several other plants are liable. Branches of Thyme strewed about articles liable to damage from mice are said to prevent their depredations: and probably sprinkling the essential oil might prove effectual. E.)

[*] (This favourite variety is often cultivated in gardens for its peculiarly agreeable odour, and its use for culinary purposes. It continues to blossom late, and beds of it should be planted in every bee garden. It must be, like other accidental varieties, propagated by slips and cuttings; when raised from seeds the plants have not the fine scent. E.)

rent at the base. Blossoms about six in a whorl, bluish purple, middle segment slightly notched.

Basil Thyme. *Dry hills, on chalk and gravel, Not unfrequent in Norfolk and Kent. Mr. Woodward. On the side of Hamilton, Yorkshire. Mr. Robson. Wick Cliffs, Glostershire. Mr. Swayne.* St. Vincent's Rocks, Bristol. (Leckhampton Hill, two miles from Cheltenham. Rev. S. Dickenson. Fields near East Common wood, Hexham; and Dorking, Surry. Mr. Winch. Grafton and Rolls Wood fields, Warwickshire. Purton. E) A. June—Aug.*

T. NEP'ETA. (Whorls many-flowered: E.) fruit-stalks axillary, forked, longer than the leaves: (leaves serrated: hairs in the mouth of the calyx prominent. E.)

Riv. Mon. 47—*Gies.* 1. 14—*Curt.*—(*E. Bot.* 1414. E.)—*Blackw.* 167—*Matth.* 617—*Dod.* 98. 2—*Lob. Obs.* 275. 1, *and Ic.* i. 513. 2—*Ger. Em.* 687. 3—*Park.* 37. 4. *a.*

(Strong-scented; smaller than *T. Calamintha.* E.) *Leaves* in opposite six, pairs, nearly sessile, egg-shaped. *Fruit-stalks*, subdivided in three to each supporting a flower. *Calyx* coloured, ribbed, the outside having short hairs and shining glands, smooth within, but closed at the mouth with long hairs; the three upper teeth equal, the two lower rather longer, equal, and more pointed; ribs fifteen. *Blossom* pale bluish purple; *lower lip* with white club-shaped bristles at the base; lateral segments egg-shaped, the middle one kidney-shaped, toothed.

In a garden the leaves become six times as large as in the natural soil, but the flowers not larger, and the fruit-stalks shorter than the leaves.

Field Baum. (Lesser Calamint. *T. Nepeta.* Sm. Relh. Hook. *Calamentha fol. incano.* Riv. *Melissa Nepeta.* Linn. Curt. Willd. With. Ed. 4. E.) Sides of roads, corn-fields, and hedge banks. Norfolk, frequent. Mr. Woodward. (About Hastings Castle. Mr. Borrer. Near Tunbridge Wells. Mr. Forster. Hedge on the right, just below the Kennet Bell, Suffolk. Sir T. G. Cullum. In the old sandpits at the back of Charlton Church, Kent. Curtis. Common in Essex. South Normanton, Derbyshire. Pilkington. Denbigh Castle; and Craig near Denbigh. Mr. Griffith. Neighbourhood of Malton, Yorshire. Teesdale, in Bot. Guide. E.) P. Aug.†

(T. CALAMIN'THA. Whorls many-flowered: E.) fruit-stalks axillary, forked, as long as the leaves: (leaves slightly serrated: hairs of the calyx not prominent. E.)

Kniph. 4—*Ludw.* 33—*Riv. Mon.* 46. 2—(*E. Bot.* 1676. E.)—*Dod.* 98. 1—*Lob. Obs.* 274. 2, *and Ic.* i. 513. 1—*Ger. Em.* 687. 3—*Park.* 36—*H. Ox.* xi. 21, *row* 2. 3—*Pet.* 34. 1—*Blackw.* 166—*Matth.* 716—*Ger.* 552. 1.

(Whole *herbage* downy. *Stem* erect, bushy. *Leaves* an inch long, marked with pellucid dots, paler underneath; sometimes entire, or nearly so. E.) *Leaves* in opposite pairs on leaf-stalks. *Fruit-stalks* three-forked, the lateral arms forked. *Calyx* with thirteen ribs, short hair, and shining

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* (Under an erroneous notion that this plant produces no seeds, the ancients applied to it the name ἄκυνος (*Acinos*), sine semine, sterilis. E.)

† (A warm, pungent, medicinal plant, recommended in infusion as a stomachic and deobstruent. E.) *Cassida viridis* feeds upon it.

globules; segments fringed, and the mouth closed with long hairs; teeth pointing upwards after the blossom falls off, the three upper equal, the two lower longer, and more pointed. Blossom tube with white club-*shaped hairs; upper lip* lilac-coloured within; *lower lip* pale, but marked with three round spots, and a few short streaks of a deeper hue. *Summit one segment greatly longer than the other, and hooked.* (*Blossom* twice the length of the calyx. E.)

COMMON CALAMINT. BAUM. (Irish: *Luss na beag.* Welsh: *Erbin cyffredin. T. Calamintha.* Scop. Relh. Sm. *Melissa Calamintha.* Linn. Huds. With. Ed. 4. Purt. *Calamentha.* Riv. E.) Sides of roads and corn-fields. Dudley Castle. Near Tamworth Castle. Banks of the Avon, near Bristol. (About Dorking. Mr. Winch. On the higher parts of Penmon parish, and Llangoed, Anglesey. Welsh Bot. Road sides, Chudleigh, Devon. Rev. J. Pike Jones; and by the side of the road between Shaldon and Mary-Church. E.) P. June—Aug.*

MELITTIS.† *Calyx* wider than the tube of the blossom: *Bloss.* upper lip flat, entire; lower lip trifid: *Anthers* each pair forming a cross.

M. MELISSOPHYL'LUM.

(*E. Bot.* 577. E.)—*Jacq. Austr.* 26—*Kniph.* 6—*Riv. Mon.* 21—*Lob. Obs.* 277. 2, *and Ic.* i. 515. 1—*Ger. Em.* 690. 3. *f.* 1—*Park.* 41. 4—*Fuchs.* 498 —*J. B.* iii, 233. 2—*Trag.* 12—*Clus.* ii. 37. 2—*Cam. Hort.* 30—*J. B. ib.* 1.

Calyx upright, three-cleft; the upper segment often marked with a small tooth on each side. *Blossom* white; *tube* twice as long as the calyx; *border* with four divisions, expanding, consisting of an *upper lip* roundish, upright, entire; and a *lower lip* with three clefts, the middlemost larger, flat, entire, purple. *Anthers* yellow, shorter than the blossom. Linn. *Stem* somewhat square, scored, hairy. *Calyx* hairy below, nearly smooth above, large, veined and tipped with purple. Woodw. Whole *plant* hairy. *Leaves* opposite, egg-spear-shaped, wrinkled, serrated, the teeth terminating in purplish glands. *Fruit-stalks* from the bosom of the leaves, two or three together, not expanding altogether. *Calyx*, border on the upper side turned outwards like a spout, with a spear-shaped segment on each side, the lower lip cut off and finely serrated. *Blossom* white, stained with purple, except the middle segment of the lower lip, which is full purple edged with white.

(On further examination of specimens from Devonshire and other parts, we much doubt the permanency of any specific distinction in Smith's *M. grandiflora;* (E. Bot. 636—Curt.—Mill. Ill.—Ger. Em. 690. 3. f. 2—said to grow in most coppices of Devon and Cornwall; as the road-side between Liskeard and Callington, and a mile from Ashburton on the road to Plymouth.) The character attempted to be established, of "Calyx three-lobed," in *M. Melissophyllum*; and "calyx four-lobed," in *M. grandiflora*, appears to be far from invariable. Curtis declares the divisions of the lips of the calyx to be "altogether inconstant;" the Rev. J. Pike Jones, who enjoys peculiarly favourable opportunities of studying the habits of these plants, observes, "the calyx of *M. grandiflora* is frequently trilobed:" and Smith himself admits that "the calyx varies a little with respect to occasional notches;" and that this plant "generally resembles the preceding." The white margin, surrounding the purple spot on the lower lip of the blossom, cannot be accounted very material in constituting a species. "Nimium ne crede colori," says our great master; and in respect to size of blossom, it will not be found to exceed the general luxuriance of other parts of the individual occasioned by favourable soil and situation. E.)

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* All the plants of this genus yield a fragrant, aromatic odour, and an essential oil. (they are said to make agreeable tea, of somewhat tonic effect: and to them not improperly may be applied the encomium upon their congener:

> "And *Balm* that never ceases uttering sweets."

Or metaphorically,

> "A tender smile, our sorrow's only *Balm.*" E.)

† (From μελιττα, a bee; it being productive of honey, and grateful to that insect. E.)

BASTARD BALM. BALM-LEAVED ARCHANGEL. *Melissophyllum.* Riv. Hedges and Woods in the West of England. About Totness, Devonshire; Haverfordwest, Pembrokeshire; New Forest, Hants. (In St. Leonard's Forest, going down into Isemonger's Gill, by the cross road from Hand Cross to the Horsham road. Mr. Borrer. E.)
P. May—June.[*]

SCUTELLA′RIA.[†] *Calyx*, border nearly entire, after flowering covered by a dorsal rib.

S. **GALERICULA′TA.** Leaves heart-spear-shaped, scolloped, wrinkled: flowers axillary.

Curt. 155—(*E. Bot.* 523. E.)—*Kniph.* 8—*Riv. Mon.* 77. 1, *Scutellaria*—*Blackw.* 516—*Walc.*—*Fl. Dan.* 637—*H. Ox.* xi. 20, *row* 3. 6—*Lob. Obs.* 186. 3, *and Ic.* i. 344. 2—*Dod.* 93. 2—*Ger. Em.* 477. 10—*Park.* 221—*Pet.* 34. 10.

(*Stem* acutely quadrangular, nearly smooth, twelve to eighteen inches high, much branched. *Blossom* funnel-shaped, blue, externally pubescent, solitary, three-fourths of an inch in length. *Anthers* purple. *Summits* simple. *Leaves* on very short leaf-stalks, wrinkled, veined, pubescent, paler underneath. E.)

COMMON SCULL-CAP. (Welsh: *Cyccyllog mwyaf.* E.) Banks of rivers and edges of ponds.
P. July—Aug.[‡]

S. **MI′NOR.** Leaves heart-egg-shaped, nearly entire: flowers axillary.

Dicks. H. S.—*Curt.* 283—(*E. Bot.* 524. E.)—*Ger. Em.* 581. 3—*Park.* 220. 4—*H. Ox.* xi. 20, *row* 3. 8—*Pet.* 34. 11—*Ger.* 466. 2.

Small and slender. *Leaves* egg-shaped with only one or two scollops at the base. Woodw. *Plant* from four to eight inches high, generally unbranched. *Leaves* sometimes egg-spear-shaped, a little serrated towards

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[*] (A truly elegant flower, not unfrequently admitted into gardens. Though of an unpleasant scent when fresh, when dried it is said to become delightfully fragrant. E.)

[†] (From the resemblance of the calyx to a sort of cup with a lid to it, called *scutella*. E.)

[‡] When the blossom falls off, the cup closes upon the seeds, which, when ripe, being still smaller than the cup, could not possibly escape, or overcome its elastic force, (as is done by the down of the seeds in the compound flowers,) and must consequently remain in useless confinement. But nature, ever fruitful of resources, finds a method to discharge them. The cup becoming dry, divides into two distinct parts; when the seeds, already detached from the receptacle, fall to the ground. Cows, goats, and sheep eat it; horses and swine refuse it.

the base, slightly hairy. *Calyx* with two lips, but very slightly cloven; *upper lip* with a flat ridge running across it, which, when the blossom falls, enlarges, and pressing down the upper lip, closes the mouth of the calyx, giving it the appearance of a helmet; middle segment rather shorter, nearly flat; *lower lip* broad, rather reflexed, but neither notched at the end nor keeled beneath. *Blossom* pale reddish purple, the lower lip mottled within with deeper coloured spots. *Anthers* white. *Summit* slightly cloven. (*Leaves* broader and less wrinkled than those of the preceding species. *Flowers* scarcely half so large; very rarely blue, according to Curtis. E.)

Lesser Scull-cap. Boggy ground and edges of ponds. Hampstead Heath, (where Gerard first discovered it, in 1590, "neere unto the head of the springs that were digged for water to be conveied to London." E.) Mr. Aikin. Lewesdon Hill. Mr. Baker. In Goldmire, near Dalton. Mr. Atkinson. Seaman's Moss, on the part next to Altringham, Cheshire. Mr. Caley. (In Bagot's Park, and on Norton Bog, Staffordshire. Hon. Mr. Bagot. Needwood Forest, Staffordshire. In Terrington Car, Yorkshire. Teesdale. Sides of bogs on the forest near Tunbridge Wells. Forster, in Bot. Guide. In a pit at Streatham. Martyn. Putney and Shirley Commons. Curtis. Wareham Heath, and in Purbeck. Pulteney. Culgaith Moor, and Keswick. Hutchinson. Mr. Winch says no Botanist has since noticed it in Cumberland. Boggy places in Staley Moor, Cheshire. Mr. Bradbury. Swampy meadows and pastures about Carnarvon and Llanberris. Bingley. On the bogs of Haldon, Devon. Rev. J. Pike Jones. At Brabourne, Willesboro' Leas, and Ham Ponds, Kent. Mr. G. E. Smith. On Cae rhôs Lligwy, Anglesey. Welsh Bot. Banks of the Clyde at Rose-bank. Ure. Hook. Scot. E.) P. July—Aug.

PRUNEL'LA.* *Filaments* forked, one of the divisions bearing the anther: *Summit* cloven.

P. vulga'ris. All the leaves egg-oblong, serrated, on leaf-stalks: upper lip of the calyx lopped, tridentate.

Curt. 229—(*E. Bot.* 961. E.)—*Ludw.* 19—*Kniph.* 5—*Fl. Dan.* 910—*Blackw.* 24—*Mill.* 69. 2—*Dod.* 136. 1—*Lob. Obs.* 251. 3, and *Ic.* i. 474. 2—*Ger. Em.* 632. 1—*Park.* 1680. 1—*H. Ox.* xi. 5, *row* 1. 1. *f.* 4—*Pet.* 32. 11—*Walc.*—*Riv. Mon.* 29. 1. *Brunella*—*Ger.* 507. 1—*Fuchs.* 621—*J. B.* iii. 428. 2—*Trag.* 310—*Matth.* 963.

In open sunny situations it grows trailing, and not above a finger's length, but in woods it is upright, and near a foot high. Linn. Whole *plant* thinly set with hairs. *Leaves* opposite. *Floral-leaves* heart-shaped, ribbed, edged with purple and fringed. *Calyx, upper lip* with seven ribs; *lower lip* with two spear-shaped segments, each marked with three lines, and serrated with short stiff hairs. *Blossom* blue, purplish, or white; *upper lip* slightly notched at the end: *lower lip*, middle segment jagged. *Summit*, segments revolute. (*Stem* often branched, set with whitish hairs. *Flowers* densely whorled, forming an obtuse, cylindrical, oblong, solitary spike. E.)

(Var. *Fl. alb.* Aspatria Moss, Cumberland. Rev. J. Dodd. E.)

Self-heal. (Irish: *Keannavan beug.* Welsh: *Meddyges lâs.* E.) Meadows and pastures. P. Aug.

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* (From the German *die breune*, sore throat; the plant having formerly been esteemed as a vulnerary for the cure of apthæ and inflammation of the fauces. E.)

ANGIOSPERMIA.

BARTSIA.* *Capsule* two-celled: (*Seeds* angular. E.)

B. visco'sa. Upper leaves alternate, serrated: flowers distant, lateral: (stem cylindrical. E.)

(*Hook. Fl. Lond.* 167—*E. Bot.* 1045. E.)—*Lightf.* 14 *at p.* 321—*Ger.* 85—*Pluk.* 27. 5—*Pet.* 36. 6—*Barr.* 665.

Stem cylindrical, simple, though sometimes branched nearly to the middle; about a foot high. *Leaves* sessile spear-shaped, sharply serrated, slightly hairy. *Flowers* solitary, axillary, on short fruit-stalks. *Calyx* very large, as long as the blossom, with four or five deep divisions. *Blossoms* yellow. *Filaments* rolled spirally. (Whole *plant* viscid. *Bloss.* having a large, patent three-lobed lower lip, with two tubercles in the centre. *Seeds* destitute of winged angles. Hook. E.)

(Yellow Viscid Bartsia. E.) Marshes in Cornwall and Devon. Near Ormskirk, Lancashire. Hudson. Cornfields near Plengwarry, and Cosgarne, Cornwall. Mr. Watt. (Allerton, near Liverpool. Mr. R. Roscoe; Crosby, and four miles north-west of Warrington, plentiful. Dr. Bostock. Banks of Gair Loch, Scotland. Mr. Winch. In fields above Dartmouth Castle. Rev. J. P Jones. Plentiful in a field opposite the county gaol at Bodmin, and at the Land's End. Mr. W. Christy. In a pasture opposite the hill of Dumbuck, at the western end of the range of Kilpatrick mountains. Mr. Maughan; and near Greenock battery. Mr. M. Y. Starke. Fl. Lond. Meadows about Drymma, and other places near Swansea. Mr. Dillwyn. Said to be common in the counties of Kerry and Cork. E.) A. July—Sept.

B. alpi'na. Leaves opposite, (obscurely heart-shaped; E.) bluntly serrated: (stem quadrangular. E.)

Dicks. H. S.—(*Hook. Fl. Lond.* 87—*E. Bot.* 361. E.)—*Fl. Dan.* 43—*Pluk.* 163. 5—*Pon. in Clus.* ii. 343.

(The upper leaves or *bracteas*, smaller, and tinged with violet colour. E) *Blossoms* in leafy spikes, (deep purplish violet colour, three times the length of the coloured viscid calyx, claviform, a little curved. *Stem* about a span high, upright, simple, leafy. Turns singularly black in drying; Hooker: as also does the former species. E.)

Alpine Bartsia or Painted-cup. Banks of rivers in rough sunny places. By a rivulet near Orton, in crossing the road to Crosby, Westmoreland. Ray. (Among rocks to the east of Malghyrdy in the Highlands of Scotland. Dickson. Near Widdy Bank in Teesdale Forest, Durham. Mr. Winch. P. July—Sept. E.)

B. odonti'tes. (Leaves spear-shaped, serrated: upper ones alternate: flowers in unilateral clusters: stem quadrangular. E.)

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* (So named by Linnæus in honor of his beloved friend, Dr. John Bartsch, of Koningsberg, a most ingenious young man of great promise, devoted to the study of nature, who perished untimely whilst pursuing his researches in Surinam, whither he was sent by the illustrious Boerhaave. This event is feelingly lamented by Linnæus in his "Flora Suecica," p. 211. "Juvene pulcherrimo, candidissimo et certe doctissimo ac nationis suæ ornamento: * * * * meliori fato, si quis alius, dignissimus." E.)

Curt.—*Kniph.* 12—(*E. Bot.* 1415. E.)—*Fl. Dan.* 625—*Riv. Mon.* 90. 2, *Odontites*—*Dod.* 55—*Lob. Obs.* 261. 2, *and Ic.* i. 496. 2—*Ger. Em.* 91. 2—*Park.* 1329. 3—*H. Ox.* xi. 24. 10—*Pet.* 36. 4—*Ger.* 85.

Stem about a foot high, bluntly four-cornered, rough. *Branches* in opposite pairs. *Leaves* sessile, opposite, rough; spear, or strap-spear-shaped. *Flowers* pointing one way, forming long, terminal, leafy bunches. *Calyx* hairy without, coloured. *Blossom* pubescent; *upper lip* slightly notched at the end; *lower lip*, middle segment slightly indented. *Filaments* flatted. The lobes of all the anthers terminate at the base in a short taper point, and between the lobes are white club-shaped substances. *Germen* compressed, hairy, surrounded and sheathed at the base by a thin membrane. *Summit* a knob. *Leaves* sometimes reddish. *Blossoms* dusky red, or purple: (rarely white. Curt. *Seeds* angular, striated. Sm. E.)

Var. 2. Flowers white. Stem very pale green. Leaves without any tinge of red.

Gathered by Rev. —— Bourne on Northington Farm, Grimley, near Worcester. (Mr. Woodward also found this variety growing near Diss, in Norfolk. E.)

(Red Bartsia or Painted-cup. (Irish: *Ruisnin Raihairk.* Welsh: *Gwaedlys bychan.* *B. Odontites.* Huds. Relh. Sm. Hook. Grev. *Euphrasia Odontites.* Linn. (Lightf. With. to Ed. 7. Hull. Sibth. Abbot Curt. In corn-fields, meadows, and pastures. E.) A. July—Sept.

RHINAN'THUS.* *Calyx* quadrifid, inflated: *Capsule* two-celled, compressed: (*Seeds* compressed, imbricated. E.)

R. cris'ta-gal'li. (Upper lip of the blossom compressed, arched, and shorter: calyx smooth: leaves spear-shaped, serrated. E.)

Curt. 320—(*E. Bot.* 657. E.)—*Kniph.* 12—*Fl. Dan.* 981—*Riv. Mon.* 92. 2, *Christa Galli*—*Dod.* 556. 1—*Lob. Obs.* 285. 2, *and Ic.* i. 529. 2—*Ger. Em.* 1071. 1—*Park.* 713. 2—*H. Ox.* xi. 23, *row* 2. 1—*Pet.* 36. 2—*Walc.*—*J. B.* iii. 436. 3—*Ger.* 912.

Calyx equal, four-cleft, (enlarged after flowering. E.) *Capsule* bordered at the edge. *Seeds* inclosed by a loose membrane. Linn. *Stems* obscurely quadrangular, with dark purple stains. *Leaves* in pairs, opposite, sessile, above dark green and rough, beneath grey, curiously reticulated with green veins. *Blossom* yellow; segments of the upper lip bluish. *Germens* surrounded at the base by a membranous nectary, and in the front a short, thick, crooked, horn-shaped gland. The *seeds* when ripe rattle in the capsule, (whence its English name, and announce mid hay-harvest. E.)

Var. 2. Linn. (Willd. *R. major.* Ehrh. Sm. Blossoms smaller, upper lip purple. (Also distinguished, according to Dr. Richardson, by its greater size, being two feet high, and much branched, bushy appearance. E.) Corn-fields between Wetherby and Catall, and near Boroughbridge, Yorkshire; and West Newton, Northumberland. Ray. (Frequent in the mountainous pastures near Llanberris, North Wales. Mr. Griffith. E.)

Yellow Rattle. (Cock's-comb. Penny-weed. Irish: *Bodan Chloi-*

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* (From ῥὶν, the nose; and ἄνθος, a flower; in allusion to the form of the blossom, though not a palpable hit. E.)

gin. Welsh: *Cribell melyn; Arian gwion.* E.) Meadows, pastures, and woods. A. June—July.

EUPHRA'SIA.[*] *Cal.* four-cleft: *Anthers* spinous: *Caps.* two-celled, egg-oblong: *Seeds* few, reclining, striated.

E. OFFICINA'LIS. Leaves egg-shaped, furrowed, sharply toothed.

Curt. 335—*Fl. Dan.* 1037—(*E. Bot.* 1416. E.)—*Woodv.* 220—*Sheldr.* 48—*Kniph.* 8—*Walc.*—*Ludw.* 135—*Riv. Mon.* 90. 1, *Euphrasia.*—*H. Ox.* xi. 24. 1. *b.*—*Matth.* 1022—*Ger.* 537. 1—*Dod.* 54. 3—*Lob. Obs.* 261. 1, *and Ic.* i. 491. 1—*Ger. Em.* 663—*Park.* 1329. 1—*H. Ox.* xi. 24. *a.*—*Fuchs.* 247—*Trag.* 238—*J. B.* iii. 432. 3—*Blackw.* 127.

Stems reddish, one to six inches high, pubescent. *Branches* in opposite pairs. *Leaves* sessile, mostly opposite, hairy. *Calyx* with five flat sides and five angles, but segments rarely five, unequal, spear-shaped, dark purple at the ends, with a few dark purple globular glands on the outside. *Anthers* brown, with a few white hairs on the lower part where they open. *Summit* fringed with minute glands round the edge. *Seed-vessel* slightly notched, pubescent towards the top, and marked with black dots. *Seeds* egg-shaped. *Blossoms* gaping, bluish white, with purple streaks, (axillary, numerous, and elegant; subject to considerable variation in size and colour. E.)

EYE-BRIGHT. (Irish: *Linn Raihairk: Luss na bainne.* Welsh: *Goleu-drem; Effros.* Gaelic: *Rein-an-ruisg.* E.) Heaths; dry barren meadows, mountainous pastures, and downs. A. June—Sept.[†]

MELAMPY'RUM.[‡] *Cal.* four-cleft: *Bloss.* upper lip compressed, edges reflexed: *Caps.* two-celled, compressed, opening on one side: *Seeds* two, gibbous, smooth.

M. CRISTA'TUM. Spikes quadrangular: floral-leaves heart-shaped, finely toothed, closely imbricated.

E. Bot. 41—(*Fl. Dan.* 1104. E.)—*Kniph.* 11—*Riv. Mon.* 81. 1, *M. cristatum*—*Pluk.* 99. 2—*J. B.* iii. 440. 2—*H. Ox.* xi. 23. 2.

Whole *plant* nearly smooth, much branched. *Stems* one and a half to two feet high, sometimes roughish. *Branches* opposite, numerous, diverging, so that where numbers grow together they are so entangled that it is almost impossible to extricate them. *Leaves* nearly two inches in length, opposite, sessile, strap-shaped but taper-pointed, those below the branches reflexed, on the branches horizontal. *Spikes* terminating the stem and branches. *Floral-leaves* purplish, large, the middle tooth lengthened out into a long awl-shaped point bent downward, very long at the bottom of the spike, shorter upwards, but all more or less so; sides doubled together, closely pressed together at the edges, forming a square head with hollow sides, having the horns at the angles. Woodw. (*Blossom* purplish, bordered with cream-colour. *Caps.* crescent-shaped, with two large seeds in each cell. Sm. E.)

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[*] (From ευφραινω, to give joy, as by its reputed power of restoring impaired vision. E.)

[†] It is a weak astringent, and was formerly in repute as a specific opthalmic. It flourishes most when surrounded by plants taller than itself. Cows, horses, goats, and sheep eat it. Swine refuse it. (It is supposed to be an ingredient in Rowley's British herb tobacco and snuff. Though the medicinal properties of Eyebright have long fallen into discredit, frequent mention is made of them in the older writers: and Milton, probably with no small personal feeling in his days of darkness, thus alludes to them:

> ———— "But to nobler sights
> Michael from Adam's eyes the film remov'd,
> Which that false fruit that promis'd clearer sight
> Had bred; then purg'd with *Euphrasy* and rue
> The visual nerve, for he had much to see." E.)

[‡] (From μελος, black; and πυρος, wheat; communicating a grey colour when mixed with wheat flour. E.)

CRESTED COW-WHEAT. Woods of Cambridgeshire and Bedfordshire plentifully; and among corn at Waltingfield, near Wakefield. Ripton wood, Huntingdonshire, (and near Ixworth, Suffolk. E.) Mr. Woodward. (In Maple-bush lane, Gressenhall, Norfolk. Mr. Crowe. Fl. Brit. E.) A. June—July.

M. ARVEN'SE. Spikes conical, loose: floral-leaves with bristle-shaped teeth, coloured.

(*Hook. Fl. Lond.* 63. E.)—*Fl. Dan.* 911—*E. Bot.* 53—*Riv. Mon.* 80, *M. arvense*—*Kniph.* 1—*Clus.* ii. 45. 1—*Ger. Em.* 90. 3—*J. B.* iii. 439. 2—*H. Ox.* xi. 23, *row* 1. 1—*Dod.* 541. 2—*Lob. Obs.* 23. 1, *and Ic.* i. 37, *Trit. vacc.*—*Ger. Em.* 90. 1—*Park.* 1327. 4—*Trag.* 663.

Stem upright, (about two feet high, purplish, quadrangular, E.) slightly hairy, branched. *Leaves* opposite, spear-shaped, lengthened out into a very long point, nearly sessile, slightly downy. *Flowers* in an oval head, (gradually lengthening out. E.) *Floral-leaves* long, spear-shaped, wing-cleft, with teeth at the base, entire upwards. Woodw. *Blossom* large, yellow and dusky purple. (Segments of the *calyx* peculiarly long, linear coloured: *seeds* two in each cell, though often by abortion solitary. Sm. E.)

PURPLE COW-WHEAT. Corn-fields. Near Lycham, Norfolk. Sherard. Hoosley Bath, near Beeston Castle, Cheshire. Costesy, near Norwich. Mr. Crowe Bixley, near Norwich. Mr. Woodward. (In the common field at Sporle, Norfolk, especially among wheat. Rev. J. S. Watts, in Bot. Guide. E.) A. July.*

M. PRATEN'SE. Flowers axillary, unilateral: leaves in distant pairs: blossom closed: (lower-lip protruded. E.)

E. Bot. 113—*Kniph.* 11—*Walc. M. sylvaticum*—*Ger.* 84. 1 *and* 2—*Clus.* ii. 44. 2—*Lob. Obs.* 22. 2, *Ic.* i. 36. 2—*Ger. Em.* 91. 1—*Park.* 1326. 1—*H. Ox.* xi. 23. 3.

Leaves spear-shaped, greatly tapering towards the point, all serrated, but the serratures extremely fine, and the edges of the leaves rather turned back; they are not very readily seen. *Stem* feeble, (12 to 18 inches high, sometimes nearly decumbent, E.) cylindrical towards the bottom, quadrangular upwards. *Calyx* purplish without; *segments* with minute stiff bristles along the edge; the two *upper* longer. *Blossom* of a full yellow, very much compressed; the notch in the upper lip barely perceptible; *lower lip* with two orange-coloured rising plaits; *tube* straw-coloured. *Filaments* four, supporting what appears a single anther, which is egg-shaped, compressed, hairy at the edges, and opening at the front edge,

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* (By some considered sufficiently beautiful to merit cultivation in our gardens. E.) The seeds, when ground with corn, give a bitterness and greyish cast to the bread, but do not make it unwholesome. (They somewhat resemble fine grains of wheat; whence the English name. E.) Cows and goats eat it. Sheep refuse it.

divisible into four portions, but as readily breaking in any other direction; after flowering separating into two or four parts. *Style* corresponding to the bend of the upper lip of the blossom, rising over the anther, and presenting its *summit* to the opening, whence the pollen escapes. *Seed-vessel* a yellow glandular substance at the base on the fore part, doubled down, and so brittle as not to admit being straightened. The teeth at the base of the leaves, particularly of those next the flowers, sufficiently distinguish this from *M. sylvaticum,* in which all the leaves are entire. The lower lip of the blossom in *M. sylvaticum* is turned downwards and outwards, in *M. pratense* it turns upwards and inwards, mouth closed, not gaping, as in the first-named species.

COMMON YELLOW COW-WHEAT. (Welsh: *Gliniogai melyn.* E.) (Frequent in woods and thickets, especially in clayey soil. E.)

Sometimes mistaken for *M. sylvaticum,* probably because it grows in like situations; thus too much attention to a trivial name may be the occasion of error.

Var. 2. Blossom white, with two yellow spots on the lower lip. Ray.

Woods and thickets, in soil that retains moisture. Frequent in Norfolk and Suffolk. Woodward. In woods near the road from Birmingham to Hales Owen; and at Edgbaston. A. July—Aug.*

M. SYLVAT'ICUM. Flowers unilateral: leaves in distant pairs: blossom widely gaping, lip deflexed. E.)

(*Hook. Fl. Lond.* 176—*E. Bot.* 804. E.)—*Fl. Dan.* 145—*Kniph.* 9.

Stem above one foot high. *Leaves* very entire, all of them undivided, very long, spear-shaped. (In general habit resembling the preceding; but *blossoms* only half the size, and entirely yellow, the lower lip not extending beyond the upper. E.)

(SMALL-FLOWERED COW-WHEAT. E.) Woods and shady places: not common. In the way from Taymouth to Lord Breadalbane's cascade, and about Finlarig, at the head of Loch Tay. Lightfoot. Wick Cliffs, Somersetshire. Mr. Swayne. Woods at Castle Howard. Teesdale. Rydal, Westmoreland. Mr. J. Woods, jun. Woods near Hanwood; near Bedston, Ludlow. Dr. Evans. Banks of the Tees above Middleton; Egleston wood. Rev. J. Harriman. At Wince Bridge, Teesdale. Mr. Brunton. Scale Hill, Cumberland. Mr. J Woods, jun. Bot Guide. Side of Bala Pool, on the rock above Llanycil. Mr. Griffith. Banks of the Llugwy, by the fall of Rhaiader y Wenoel. B. Botfield, Esq. Moness, and at Cona Lyn. Mr. Winch. Woods about Abergavenny, at the foot of the Sugar Loaf, in great plenty. Purton. E) A. June—Aug.†

LATHRÆA.‡ *Germen* with a depressed gland at its base: *Caps.* one-celled; receptacles lateral, sponge-like.

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* Where this plant abounds, the butter is yellow, and uncommonly rich. Swine relish the seeds. Sheep and goats eat it. Cows are very fond of it. Horses and swine refuse it.

† Cows, sheep, and goats eat it; and with a plentiful allowance of it soon grow fat, (but the butter obtained from such pasturage has been observed by Linnæus to be of a deep saffron or reddish hue. E.)

‡ (From λαθραιος, secret; descriptive of the shady recesses in which only it is found. E.)

L. SQUAMA'RIA. Stem undivided: flowers pendulous: lower-lip trifid. *Dicks. H. S.*—*E. Bot.* 50—*Fl. Dan.* 136—*Riv. Mon.* 89. 2, *Squamaria*—*Barr.* 80—*H. Ox.* xii. 16. 14—*Matth.* 964—*Ger.* 1387. 1—*J. B.* iii. 783. 2—*Blackw.* 430—*Dod.* 553. 1—*Park.* 1363. 4—*Clus.* ii. 120. 1—*Ger. Em.* 1585. 1—*H. Ox.* xii. 16. 11.

Root beaded (with white, fleshy, imbricating scales. E.) *Root-leaves* none. *Stem-leaves* membranous, coloured. *Branches* none. *Blossom,* lower lip white. Linn. (Smith considers the real *root* to be fibrous and parasitical, and what is usually described as such, a subterraneous portion of stem. *Flowering stem* rising at right angles from the lower horizontal portion. *Plant,* in singularity of habit, approaching *Orobanche.* E.) *Stem* naked, except sometimes one or two oval scales. *Flowers* in a spike, from one side of the stem, in a double (or treble, E.) row. *Floral-leaves* roundish-oval, large, reddish, one at the base of each fruit-stalk, forming a double line opposite to the flowers. *Calyx* gibbous, segments equal, bluntish. *Blossom,* upper lip rather short, lopped. Woodw. *Blossom* pale purple except the lower lip. (*Stem* six to twelve inches high, many (sometimes thirty to forty) flowered, brittle, upright, fleshy, purplish. *Summit* notched. *Anthers* protruding, hairy. E.)

GREATER TOOTH-WORT.* (In woods and shady places, impervious to the sun, which may partly account for its pallid, sickly aspect. E.) Maidstone, Kent. Ray. Harefield, (Middlesex, in a shady lane leading to the river. Blackstone. Thickets below Conzick-Scar, near Kendal. Studley, Mackershaw, and other woods, Yorkshire. Mr. Brunton. E.) Not invariably confined to shady woods, but its choice of situation is determined by other causes; sometimes it is found in very light dry soil, and so entangled with the roots of some neighbouring tree, especially of Hazel, that I have reason to believe it parasitical. Mr. Gough. At the roots of trees in a wood near Gainsford, Durham. Mr. Robson. Pleasly Park, Derbyshire. Mr. Hallows. At the roots of old trees in Smallcomb wood; and in the shady walks of Prior Park, near Bath. Mr. Sole. In Leigh wood, near Bristol. Mr. Dyer. Benthal Edge, Coalbrook Dale; and shrubbery at Bitterley Court, near Ludlow. Dr. Evans, in Bot. Guide. No longer to be found at Garreg wen near Garn, (as stated in Bot. Guide,) the spot on which it grew having been washed away by floods. Mr. Griffith. Beech wood beyond Custom Scrubs, Bisley, near Painswick. Mr. Oade Roberts. In Cocken woods, Durham. Sheepley wood on Tees, and Lumlay wood. Mr. Winch. In St. Catherine's wood, Dublin. Wade. Arniston woods, abundant. Mr. G. Don. Grev. Edin. In Church-litten-coppice, under some hazels, near the foot-bridge, in Trimming's garden hedge, and on the dry wall opposite Grange-yard, Selborne. White's Nat. Hist. E.)† P. April—May.

PEDICULA'RIS.‡ *Blossom* ringent, upper lip compressed: *Caps.* two-celled: *Seeds* few, angular, pointed. E.)

P. PALUS'TRIS. Stem solitary, branched: calyx crested with callous dots: lip of the blossom oblique.

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[*] (This trivial from the resemblance of the scaly roots to human teeth. E.)

[†] (A fact recorded by Mr. J. Murray, in Mag. Nat. Hist. that a plant of this kind, transplanted from its original site into a garden, there continued to flourish, has been supposed to militate against the idea of its being parasitic; but is, perhaps, not absolutely conclusive. E.)

[‡] (From *pediculus,* a louse; from its imaginary property of infesting sheep with such vermin. E.)

(*E. Bot.* 399. E.)—*Riv. Mon.* 92. 1, *Pedicularis*—*Pet.* 36. 3—*Ger.* 913.

Stem about a foot high, angular, purplish. *Leaves* winged. *Leafits* wing-cleft. *Flowers* solitary, sessile, axillary. *Calyx* bilabiate, opening sidewise; segments cloven and jagged, two of them bordered with leafy appendages. *Blossom* purple, sometimes white; *helmet* with a little tooth on each side, not notched at the end; *lower lip* fringed with fine soft hairs.

Marsh Lousewort. (Irish: *Luss Riah.* Welsh: *Melawg y waun.* E.) Marches, ditches, moist meadows, and pastures. P. June—July.*

P. sylvat'ica. (Stems several, simple, spreading: E.) calyx oblong, angular, smooth: lip of the blossom heart-shaped.

(*E. Bot.* 400. E.)—*Clus.* ii. 111. 1—*Dod.* 556. 1—*Lob. Obs.* 431. 3, *and Ic.* i. 748. 2—*Ger. Em.* 1071. 2—*Park.* 713. 1—*H. Ox.* xi. 23. 13—*Fl. Dan.* 225—*Pet.* 36. 4—*Trag.* 250—*Lonic.* i. 148. 2.

Stem three to six inches high. *Branches* trailing. *Floral-leaves* deeply divided: segments toothed. *Calyx* angular, green within, purplish without, nearly half as long as the blossom, one of the clefts much deeper, segments toothed, that opposite to the deepest cleft the narrowest. *Blossom* purple, rather large and showy, much more slender than the calyx. *Tube* compressed. *Upper lip* with a little tooth on each side. *Lower lip* with three divisions, the middle segment a little smaller. *Filaments*, the two taller hairy towards the top. (*Root-leaves* simple, egg-shaped, scolloped. E.)

(**Dwarf Lousewort.** Irish: *Moahlin Monah.* Welsh: *Melsugn y borfa; Mêl y cwm.* E.) Wet pastures and heaths. P. June—July.†

Var. 2. *Fl. alb.* Blossoms white.

Near Redruth, Cornwall, towards the sea. Mr. Watt. Near Berkhamsted. Mr. Woodward. (Plas Newydd farm, Llangoed, Anglesey. Rev. Hugh Davies. E.)

(A remarkable variety has been gathered in Sutherland by the Marquis of Stafford, and also by Messrs. Hooker and Borrer, with a solitary flower, which instead of its proper ringent form, with two long and two short stamens, has a salver-shaped regular blossom, with six stamens, four of which are longer than the others. *Galeopsis Tetrahit*, and the various species of *Antirrhinum* have been observed also to exhibit similar appearances occasionally. Linn. Tr. vol. 10. p. 227. E.)

ANTIRRHI'NUM.‡ *Calyx* with five divisions: *Bloss.* closed by a palate, either projecting at the base, or spurred:

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* This plant is an unwholesome guest in meadows, being very disagreeable to cattle, (and sometimes almost overpowering the grasses. The spread of its seeds should be prevented as far as possible. E.) Goats eat it. Horses, sheep, and cows refuse it. Swine are not fond of it.

† The expressed juice, or a decoction of this plant, has been used with advantage as an injection for sinuous ulcers. It is said that if the healthiest flock of sheep be fed with it, they become scabby and scurfy in a short time, the wool will become loose, and they will be over-run with vermin. Cows and swine refuse it.

‡ (From ἀντὶ, instead of; and ῥὶν, a snout; (Calves'-snout,) so called because the figure of the flower in certain species, (e. g. *A. Orontium*), resembles the snout of a calf. E.)

Caps. two-celled, many-seeded, opening unequally at the top, the divisions reflexed.

(1) *Leaves angular, (alternate.* E.)

A. CYMBALA'RIA. Leaves heart-shaped, five-lobed, alternate; stems trailing.

Curt.—(*E. Bot.* 502.—*Fl. Dan.* 1220. E.)—*Riv. Mon.* 86. 2, *Cymbalaria.*—*J. B.* iii. 685—*Matth.* 1184—*Lob. Obs.* 337. 2, *and Ic.* i. 615. 1—*Ger. Em.* 529. 6—*Park.* 682. 1—*H. Ox.* v. 14. 30—*Lon.* 1. 61. 2.

Seeds wrinkled like the kernels of the walnut. *Blossom* sometimes white. Linn. Whole *plant* smooth and shining. *Leaves,* the smallest with only three lobes; lobes of the lower blunt, of the upper pointed, (often purple beneath, rather fleshy. E.) *Flowers* on long fruit-stalks bending at the top. *Blossom,* spur as long as the calyx. Woodw. *Stems* thread-shaped. *Leaf-stalks* very long, like tendrils. *Calyx,* segments equal, smooth. *Blossom* pale purple; palate yellow, tufted with orange-coloured hairs. *Nectary* slender, crooked, (rather longer than the calyx. E.)

IVY-LEAVED SNAP-DRAGON. (Welsh: *Trwyn y llô ciddewddail.* E.) About London frequent, particularly adjoining the Thames. Walls of Burleigh House, near Stamford. Mr. Woodward. (Windsor Castle. Rev. Dr. Goodenough. Fl. Brit. Pontefract. Mr. Brunton. Frequent in Sussex. Mr. Borrer. On a wall at Oldport, near Oswestry. Dr. Evans. Bot. Guide. Abbey walls, Great Malvern. Purton. St. Mary's churchyard wall, and in Mellos' lane, Warwick. Perry. Debris of Salisbury Craigs. Greville. Fl. Edin. Various walls in Oxford. Sibthorp. At Llysdulas, and Beaumaris Welsh Bot. On a wall opposite the White Hart Inn, Brislington; and about Redland Court, near Bristol, very abundant. E.) P. June—Oct.*

A. SPU'RIUM. Leaves egg-shaped, alternate, pubescent: stems trailing, hairy.

(*E. Bot.* 691. E.)—*Curt.*—*Fl. Dan.* 913—*Fuchs.* 167—*J. B.* iii. 372. 1—*Dod.* 42. 1—*Ger. Em.* 625. 1—*Lonic.* i. 63. 3—*Park.* 553. 1—*H. Ox.* v. 14. 27—*Matth.* 694—*Ger.* 501. 1—*Lob. Adv.* 197, *and Ic.* i. 470. 1—*Riv. Mon.* 86. 1, *Elatine.*

Stem branched from the base, with long expanding hairs. *Leaves* hairy, sometimes slightly toothed. *Fruit-stalks* from the bosom of the leaves *Calyx* very hairy, shorter than the body of the blossom. Woodw. *Fruit-stalks,* the lower generally shorter, the upper longer than the leaves. (*Blossom* with a recurved greenish spur; upper lip short, violet; lower yellow, palate orange. *Lower leaves* in pairs. The *flowers* are sometimes found regular. E.)

ROUND-LEAVED SNAP-DRAGON or (FLUELLIN. E.) Corn-fields, Suffolk, frequent. Mr. Woodwood. (At Seething, Norfolk. Mrs. Kett. Fl. Brit.

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* Its pendulous branches and elegant foliage, variously interwoven, often cover old moist walls with a thick tapestry, and when in blossom make a beautiful appearance. Mr. Woodward. (No plant is better adapted for ornamental rock-work. Some have supposed it to have been introduced from Italy, and to have spread from different gardens till completely naturalized but we find a notice (in Mag. Nat. Hist.) of its having been found on the lower part of a rock near Barmouth, in a situation probably wild. E.)

Langton and Pimpern corn-fields near Blandford, and in those by the side of Hambledon Hill, in which latter Dr. Pulteney found this plant with *flowers of the structure of Peloria. Sunderland Ballast Hills. Mr. Weighill. Bot. Guide. Abundant in Kent, (as is A. minus,) preferring the chalky corn-fields. Mr. G. E. Smith. Grafton, Warwickshire; Cleve and Littleton, Worcestershire. Purton. In corn-fields about Stockwood, Keynsham, Somerset, and about Mirables, Isle of Wight. Mr. Frederick* Russell. Bitton, Glostershire. Rev. H. T. Ellicombe. About Teignmouth. Rev. J. Pike Jones. E.) A. July—Sept.

A. ELAT'INE. Leaves halberd-shaped, alternate: stems trailing, hairy.

(*E. Bot.* 692. E.)—*Curt.*—*Fl. Dan.* 426—*Sheldr.* 60—*Park.* 553. 2—*J. B.* iii. 372. 2—*Ger.* 501. 2—*Matth.* 1012—*Blackw.* 170—*Dod.* 42. 2—*Lob. Ic.* i. 470. 2—*Ger. Em.* 625. 2—*H. Ox.* v. 14. 28.

Fruit-stalks whilst in flower expanding, afterwards declining. *Nectary*, a spur as long as the body of the blossom. Woodw. *Leaves*, the lower ones opposite, sometimes egg-shaped and toothed. *Calyx* hairy. *Blossom* upper lip yellow, lower lip and the *anthers* edged with deep purple. (In general habit resembling the preceding species, but rather more slender. Fl. Brit. E.)

Var. 2. Flowers regular, five-cleft, and with three, four, or five spurs, as in *Peloria*. Huds.

SHARP-POINTED FLUELLIN or SNAP-DRAGON. (Welsh: *Trwyn y llô-blaenfeinddail.* E.) Corn-fields, Suffolk, frequent. Mr. Woodward. On walls in Cornwall. Mr. Thomson. (On Sunderland and Hebburn Ballast Hills. Winch. Guide. Near Epsom, Surry. Mr. Winch. In Anglesey. Welsh Bot. E.) A. Aug.—Oct.*

(2) *Leaves opposite: nectary long, pointed.*

A. RE'PENS. Leaves strap-shaped, (glaucous, whorled, or scattered: E.) stem panicled: calyx smooth, as long as the spur.

(*E. Bot.* 1253. E.)—*Dill. Elth.* 163. 197.

The lower *leaves* four or five in a whorl. *Flowers* in terminal spikes, pale blue. Flowering *stem* stiff and upright, not at all corresponding with the idea given by the trivial name, which applies only to the root. (*Leaves* very entire, and smooth, glaucous. *Capsules* globular, furrowed. *Seeds* angular, rugged, black. It occasionally emits a sweet fragrance. It is now proved that Linnæus never saw the *A. repens* of Dillenius, but described it from that writer; and from the specimens of *A. Monspessulanum* in the Linnæan Herbarium, Smith ascertains them to be precisely the same. We have received this species from different Botanists, and gathered on the same spot, with both appellations. E.)

(CREEPING PALE-BLUE TOADFLAX. *A. repens.* Linn. Willd. Sm. Dicks. Hook. Grev. *A. Monspessulanum.* Linn. With. Willd. Field banks, and walls near Henley, in Herts. Ray. Specimens from the West of Cornwall, sent by Mr. Giddy. At Kemock kiln, near Canon-Teign, Devon. Rev. J. Pike Jones. Stone wall between Penryn and Falmouth. Mr. Watt. Hebburn Ballast Hills, Durham. Mr. Winch. Henley Hill,

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* This is considerably more bitter than the other species, and is said to have been used successfully in ulcers and cutaneous eruptions.

Oxfordshire, abundant, and plentiful about Llandovery and Llangaddock, South Wales. E. Bot. In the little lane from Cowes Castle, up the hill on the right hand. Mr. T. F. Forster, jun. Bot. Guide, in which work *Sir Joseph Banks is stated to have found, on stubble-fields near Southampton, a Pelorian variety of this plant. E.)* *P. July—Sept.*

(A. arvense, though inserted in the Flora Anglica by Hudson, from a misapprehension of Dillenius, and in former Editions of our work, is now understood to have no pretensions to a place here. E.)

(3) *Leaves opposite; nectary short, blunt.*

(A. mi'nus. Leaves mostly alternate, spear-shaped, blunt; stem much branched, spreading; (calyx longer than the spur. Fl. Brit. E.)

Dicks. H. S.—Curt. 296—*Fl. Dan.* 502—*E. Bot.* 2014. E.)—*Riv. Mon.* 85. 2, *Linaria arv. min.*—*Lob. Ic.* i. 106. 1—*Ger. Em.* 549. 5—*Park.* 1334. 2—*J. B.* iii. 465. 1—*Matth.* 1198.

(*Plant* pubescent, slightly viscid, six to twelve inches high. *Lower branches* opposite, the *upper* alternate. *Fruit-stalks* from the bosom of, and equal to, or longer than the leaves. *Calyx* segments strap-shaped, nearly equalling the blossom. *Blossom* purplish, small, lower-lip yellow.

Least Snap-dragon. Gravelly corn-fields. Binham, Norfolk. Mr. Crowe. Near Berkhamstead, Herts; (and corn-fields at Field Dalleny, Norfolk. Mr. Woodward. Willington Ballast Quay; and Fulwell Hills, near Sunderland. Mr. Winch. About Bury, Yarmouth, and Battersea. E. Bot. Fields between Chudleigh and Hennock, near Chudleigh bridge. Rev. J. P. Jones. In fields about Lanvayer and Abergavenny. Purton. About Dalbeth; Barncluith, near Hamilton. Hopkirk. Exhall and Grafton, Warwickshire, in corn-fields. E.) A. June—Sept.

(4) *Leaves alternate.*

A. lina'ria. Leaves spear-strap-shaped, crowded: stem upright: spikes terminal, sessile: flowers tiled: (calyx much shorter than the spur. E.)

Dicks. H. S.—Curt.—(*E. Bot.* 658. E.)—*Kniph.* 6—*Fl. Dan.* 982—*Riv. Mon.* 83. 1, *Linaria.*—*Woodv.* 221—*Sheldr.* 49—*Ludw.* 12—*Dod.* 183. 1—*Lob. Obs.* 222. 2, *and Ic.* 1. 106. 2—*Ger. Em.* 550. 1—*Park.* 458. 1—*Ger.* 440—*Lonic.* i. 154. 2—*Fuchs.* 515—*J. B.* iii. 456. 2—*Blackw.* 115—*Trag.* 357—*H. Ox.* v. 12. 10.

(*Root* creeping, rather woody. *Stem* nearly cylindrical, smooth, two feet high, or more, crowded with leaves, and bearing a spike of flowers several inches long, yielding a faint, rather sickly smell. E.) *Branches* nearly upright, axillary. *Calyx* smooth. *Blossom lower lip*, segments circular, the middle one much smaller, the projecting part orange-coloured, pubescent, the rest pale yellow and smooth. *Nectary* long, and awl-shaped.

Var. 2. Flowers nearly white.

Var. 3. Nectaries two or more to each flower.

Var. 4. *Peloria.** Blossoms regular, with five equal stamens and five nectaries growing in a circle around the base of the tube.

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* (From the Greek πέλως, monstrous; a deformity, out of the usual course of nature. E.)

Curt.—Amœn. Acad. i. 3, *at p.* 298—*E. Bot.* 260—*Kniph.* 9.

(Sometimes found on the same plant with flowers of the ordinary structure The fruit of this var. is generally considered abortive, but we learn fro Annals of Botany, that Hoffman has found perfect seeds, which produce plants of the common structure. Vid. further particulars of this singula production in Curt. Fl. Lond.; also a notice in Mag. Nat. Hist. i. 379 E.)

YELLOW TOAD-FLAX, FLAX-WEED,* or SNAP-DRAGON. BUTTER AN EGGS. (Welsh: *Llin y llyffant; Gingroen fechan.* E.) *Barren meadows pastures, and road sides, common. P. July—Sept.*†

(5) Blossom gaping; without a spur.

A. ORON'TIUM. Blossom without a spur: flowers loosely spiked: calyx longer than the blossom.

Dicks. H. S.—Fl. Dan. 941—*Curt.* 234—(*E. Bot.* 1155. E.)—*Kniph.* 12—*Riv. Mon.* 82. 4, *A. arvense*—*Dod.* 182. 2—*Lob. Obs.* 222. 1, *and Ic.* i. 405. 2—*Ger. Em.* 549. 4—*Park.* 1334. 1—*Lonic.* i. 155. 3—*Matth.* 1199—*Ger.* 439. 4.

Capsule when opening resembles the face or skull of a monkey. Linn. *Stem* about a foot high, upright, branched, hairy. *Leaves* spear-shaped, very entire. *Flowers* axillary, on very short fruit-stalks, sometimes, though rarely, sessile. *Calyx* hairy, segments strap-shaped, and lengthening after the falling-off of the blossom. *Capsule* much shorter than the calyx. Woodw. (*Blossoms* purplish, with a yellow palate; rarely variegated with white and violet. E.)

LESSER SNAP-DRAGON. CALF-SNOUT. Welsh: *Trwyn y llô bychan.* E.) Corn-fields in a sandy soil, and turnip-fields, Norfolk. Mr. Woodward. Worcestershire. Mr. Ballard. Corn-fields, Hants, common. Mr. Pitt. (Near Brockham, Surry. Mr. Winch. On Llysdulas demense, between the mansion and the church, Anglesey. Welsh Bot. Gulval, Land's End, Cornwall Dr. Forbes. Fields between Week farm and St. Lawrence, Isle of Wight. Mr. W. D. Snooke. E.) A. July—Aug.

A. MA'JUS. Blossom without a spur: flowers in a dense cluster: (calyx rounded, hairy: leaves spear-shaped. E.)

E. Bot. 129—*Kniph.* 1. 3—*Ludw.* 51—*Riv. Mon.* 82. 1, *Antirrhinum*—*Mill.* 42—*Dod.* 182. 1—*Lob. Obs.* 221. 2, *and Ic.* i. 404. 2—*Ger. Em.* 549. 1. 2—*Ger.* 438. 1—*Matth.* 1197.

Stem spreading, shrub-like, (but generally destroyed by frost, one to two feet high. *Leaves* somewhat stalked, acute, recurved, dark green, often purplish on the upper side. E.) *Calyx* leaves short, clammy, pubescent, (often partially coloured. E.) *Nectary* blunt, scarcely projecting. *Capsule* opening at the point obliquely, unequal at the base, (its peculiar form and three orifices causing it to resemble a skull. E.) *Blossom* large and handsome, rose red with a downy yellow palate; sometimes white.

GREAT SNAP-DRAGON. (Irish: *Srium na Laogh.* Welsh: *Safn y llew.* E.)

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* (As also the Latin trivial, from the resemblance of the leaves to those of flax. E.)

† An infusion of the leaves is diuretic and aperient. An ointment prepared from them gives relief in hemorrhoids. The expressed juice mixed with milk, is a poison to flies, as is likewise the smell of the flowers. Cows, horses, and swine refuse it. Sheep and goats are not fond of it.

Old walls; chalk cliffs near Dover, and between Northfleet and Gravesend. Walls near Norwich, and Cambridge. Mr. Woodward. Walls of Rushall Castle near Walsall. Mr. Pitt. Near the Hermitage at Warkworth, Northumberland: on the walls of Barnard Castle. Winch Guide. Saltford, Warwickshire. Littleton, Worcestershire. Purton. In Somersetshire and Devonshire, plentiful, and on Berkeley Castle and Church in rich profusion. Also at Redland, Westbury, Henbury, &c. near Bristol. On the mouldering walls of Canterbury. E.) P. June—Aug.*

SCROPHULA'RIA.† *Cal.* *five-cleft: Bloss. reversed; tube globular; the lower segment reflexed: Caps. two-celled, partition double.*

S. SCORODO'NIA. Leaves heart-shaped, doubly serrated, (downy beneath: E.) cluster compound, leafy.

(*E. Bot.* 2209. E.)—*H. Ox.* v. 35, *row.* 2. *f.* 2—*Plük.* 59. 5—*Pet.* 35. 11.

Stem very hairy, obtusely quadrangular, two or three feet high. E.)

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* (In Russia this plant is said to be cultivated for its seeds, which yield an oil little inferior to that produced from Olives. E.) Though the seeds vegetate on the ground, it is only in dry soils and situations that the plant continues to live long enough to produce flowers. (Probably not originally indigenous, but certainly a valuable acquisition even to the flower-garden, into which several striking varieties have been introduced, with blossoms of finely contrasted red and white, or altogether of the richest crimson. "The flowers of these plants are perfect insect-traps. Multitudes of small creatures seek an entrance into the corolla through the closed lips, which upon a slight pressure yield a passage, attracted by the sweet liquor that is found at the base of the germen; but when so admitted, there is no return, the lips are closed, and all advance to them is impeded by a dense thicket of woolly matter, which invests the mouth of the lower jaw:—

"Smooth lies the road to Pluto's gloomy shade;
But 'tis a long, unconquerable pain,
To climb to the æthereal realms again."

But this Snapdragon is more merciful than most of our *muscicapæ*. The creature receives no injury; but, having consumed the nectareous liquor, and finding no egress, breaks from its dungeon by gnawing a hole at the base of the tube, and thus returns to liberty and light. The extraordinary manner in which the corolla is formed, the elastic force with which the lower limb closes and fits upon the projection of the upper, manifest the obvious design of the great Architect, "whose hands bended the rainbow;" and the insects are probably the destined agents whereby the germen is impregnated; for as soon as this is effected, the limbs become flaccid, lose their elasticity, and are no longer a place of confinement. The ant is a common plunderer of this honey." Journal of a Naturalist. Vid. also Note to *Drosera*. The ingenuity of bees has been remarkably exemplified in this species of *Antirrhinum*, and also in *A. Linaria*, and some other plants whose flowers, from their long tubular formation, deny admission to the broad head and thorax of the insect. Well knowing the exact position of the prize he vainly seeks to obtain by usual means, he pierces the calyx as well as the tube with his horny proboscis, inserting it into the orifice, and thus readily abstracting the honey. E.) All the varieties of Snapdragon have the power of maintaining a state of vegetation in great droughts, and their usual stations are peculiarly exposed to the influence of the sun. Dr. Threlkeld assures us that during the prevalence of Popery, "many frivolous superstitious fables were reported of the power of this plant against spectres, charms, and witchcraft, rather savouring of rank heathenish magick, than comporting with sound reason; for the use of reliques, Agnus Deis, &c., are wicked trumpery, and defending against the devil's sword with the devil's buckler. Our being implanted into the covenant of grace is compleat security against satan's power, unless so far as God permits for the trial of our faith and patience in our Christian warfare." E.)

† From its supposed virtues in curing *Scrophula*. E.)

Leaves concave at the base, serratures accuminate. *Bunch* with leaves interspersed, which is not the case with the other species. Linn. *Floral-leaves* awl-shaped, a pair beneath each division of the fruit-stalks. Woodw. *Blossom* dusky purple, inverted. (*Calyx* pubescent. E.)

BALM-LEAVED FIGWORT. Watery places and hedges. Sea-shore about St. Ives, Cornwall: (where Messrs. Edward Llhwyd, Hudson, Dickson, and others are reported to have gathered this very rare plant: and we find by an insertion in Camden's Britannia, that Mr. E. Forster, jun. supposed he had discovered a new habitat in Hertfordshire; this, however, proves a mistake, his plant being only a variety of *S. nodosa;* and we suspect *S. Scorodonia* should be altogether considered as a mere interloper; the Jersey station certainly having little more claim for insertion here than Gibraltar. E.) P. July—Aug.

S. NODO'SA. Leaves oblong-heart-shaped, three-ribbed at the base, angles of the stem acute: (root tuberous. E.)

(*Fl. Dan.* 1167—*E. Bot.* 1544. E.)—*Kniph.* 2—*Ludw.* 72—*Gunn.* ii. 4. 1—*Blackw.* 87—*Fuchs.* 194—*J. B.* iii. 421—*Riv. Mon.* 107. 1, *Scrophularia*—*Matth.* 1130—*Dod.* 50. 1—*Lob. Obs.* 289. 1, *and Ic.* i. 533. 2—*Ger. Em.* 716. 1—*Park.* 610. 1—*H. Ox.* v. 8, *row* 3. 3—*Pet.* 35. 9—*Ger.* 579. 2—*Trag.* 184—*Lonic.* i. 135. 3.

Stem, (two or three feet high. E.) angles sometimes edged with a membranous line, but not to be called winged. *Leaves* imperfectly heart-shaped, the base being rather cut transversely. Crantz. *Leaves* and serratures pointed. *Flowers* on forked branches. *Floral-leaves* spear-shaped, taper-pointed, a pair to each flowering branch. Woodw. *Upper-leaves* nearly sessile, spear-shaped. *Fruit-stalks* cylindrical, with short pellucid hairs terminated by globules. *Calyx* toothed and membranous at the end. *Blossom tube* filled at the base with a honey-like liquor. *Upper segments* dusky purple; the rest pale green: the two *lateral* ones expanding; the *lower* rolled back. The little heart-shaped segment within the base of the two upper segments seems to deserve the name of *nectary.* *Capsule* sometimes with three or four cells. (*Root* large, consisting of roundish knobs, which are said to disappear as the plant attains maturity. E.)

KNOTTY-ROOTED FIGWORT. KERNELWORT. (Irish: *Faruh Duh.* Welsh: *Deulen ddâ ddâ; Gorneith.* E.) Woods and moist hedges. P. July.*

S. AQUAT'ICA. Leaves heart-shaped, blunt, on decurrent leaf-stalks: angles of the stem membranous: (root fibrous. E.)

(*Curt.* 291—*E. Bot.* 854. E.)—*Kniph.* 11—*Blackw.* 86—*Fl. Dan.* 507—*Dod.* 50. 2—*Lob. Obs.* 288. 1, *and Ic.* i. 533. 1—*Ger. Em.* 715—*Park.* 613—*Pet.* 35. 10—*H. Ox.* v. 8, *row* 3. 4—*Ger.* 579. 1.

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* Figwort is hardly known in modern practice; but the rank smell, and bitter taste of the leaves seem to indicate active properties.—Swine that have the scab are cured by washing them with a decoction of the leaves. Wasps resort greatly to the flowers; (both species are supposed also to yield much honey to bees. E.) Goats eat it. Cows, horses, sheep, and swine refuse it. (Gerard, who was not remarkably addicted to incredulity, contents himself with giving the salutary warning, that "Divers do rashly teach, that if it be hanged about the necke, or else carried about one, it keepeth a man in health:" from which we may infer, that its more ostensible virtues were even then by no means unequivocal, or, at least, little understood. E.)

(*Plant* strong smelling. E.) *Stem* smooth, quadrangular, three or four feet high. *Leaves* heart-egg-shaped, scolloped, (veiny. E.) *Panicle* naked, branched; the lower branches opposite, the upper alternate, forked. *Floral-leaves* awl-shaped, a pair at the base of each branch. Woodw. *Upper-leaves* egg-shaped. *Flowers* dingy red, (tube greenish. E.)

WATER BETONY or FIGWORT. (Welsh: *Gorneth y dwr*. E.) Watery places, and banks of rivers. P. July—Sept.[*]

S. VERNA'LIS. Leaves heart-shaped, (pubescent: E.) those of the stem ternate: fruit-stalks axillary, solitary, forked, leafy: (blossom without an inner lobe. E.)

(*Hook. Fl. Lond.* 70—*E. Bot.* 567. E.)—*Fl. Dan.* 411—*Riv. Mon.* 107. 2, *Scrophularia flore lut.*—*Barr.* 273—*Clus.* ii. 38. 1—*Ger. Em.* 717—*Park.* 608. 4—*C. B. Pr.* 112.

(*Herb* pubescent. *Blossom* egg-shaped, yellow, the fine clefts nearly equal, mouth contracted. E.) *Leaves* doubly serrated. *Fruit-stalks*, primary ones longer than the leaves, the secondary short. *Floral-leaves* spear-shaped, a pair at the base of the secondary fruit-stalks. Woodw. (*Stem* quadrangular, sometimes pentagonal, hollow, one to two feet high. E.)

YELLOW FIGWORT. Watery places and hedges. Near Mitcham, Surry. Hudson. Gloddaeth, Carnarvonshire. Fornham, near Bury. Mr. Woodward. (About Newburgh, near Coxwould, Yorkshire. Rev. Archdeacon Pierson. Fl. Brit. About Llanforda, the seat of Sir W. W. Wynne. Merionethshire. Bingley. Moist hedges by the road-side between Sampford and Hempsted, plentifully. Mr. E. Forster, jun. Bot. Guide. By the side of the iron rail-way from Merton to Wandsworth. Mr. Graves. In great abundance on a bank near Cley, Norfolk. Hooker. Old walls near Hatton. Maughan. Grev. Edin. E.) B. April—April.[†]

DIGITA'LIS.[‡] *Cal.* with five divisions: *Bloss.* bell-shaped: five-cleft, gibbous beneath: *Caps.* egg-shaped, two-celled, many-seeded.

D. PURPU'REA. Segments of the calyx egg-shaped, acute: blossom obtuse, upper lip nearly entire.

(*Lindley* 2. E.)—*Riv. Mon.* 104, *Digitalis*—*Curt.*—(*E. Bot.* 1297. E.)—*Woodv.* 24—*Fl. Dan.* 74—*Tourn.* 73. *A. E. L. M.*—*Fuchs.* 893—*Trag.* 889—*J. B.* ii. 812. 3—*Lonic.* i. 74. 1—*Blackw.* 16—*Dod.* 169—*Lob. Obs.* 308. 2. *Ic.* i. 572. 1—*Ger. Em.* 790. 1—*Park.* 653. 1—*Ger.* 646. 1—*Lob. Ic.* i. 572. 2—*H. Ox.* v. 8, *row* 1. 1—*Swert.* 6. 1 *and* 2.

(*Stem* upright, rod-like, three or four feet high, pubescent, leafy, nearly cylindrical. *Capsules* acuminate. *Leaves* large, rugose, reticulated with prominent veins underneath, scolloped; teeth small, deep. *Leaf-stalks* half embracing the stem. *Floral-leaves* spear-shaped, purplish towards the point. *Flowers* in long terminal spikes, unilateral, pendulous. *Blos-*

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[*] (This plant should probably rank among the vegetable poisons. It is said to be decidedly narcotic; but the qualities seem to vary, perhaps according to its growth in watery or drier situations. E.)

[†] The different species of *Scrophularia* afford nourishment to *Phalæna Verbasci*, *Curculio* and *Tenthredo Scrophulariæ*.

[‡] (From *digitus*, a finger; its flower resembling the finger of a glove, (and hence sometimes called *Finger-flower*); so named by Fuchsius, after its German designation. E.)

soms numerous, purple, elegantly mottled, and hairy within; inversely conical, but tumid on the under side, large, and handsome. E.)

Var. 2. *Fl. alb.* Flowers white.

Shenstone Lane, near Hartlebury, Worcestershire. Stokes. (On Ramps Holm in Derwentwater. Mr. Winch. By the road side near Penmynydd, Anglesey. Welsh Bot. E.) About Moxhull, Staffordshire. The pure milk-white colour of the blossoms renders this variety an ornament to our flower-gardens.

PURPLE FOXGLOVE. (Irish: *Mearecan.* Welsh: *Ffion y ffridd; Bysedocochion.* Gaelic: *Meuran-sith.* E.) Hedge-banks and sides of hills in dry gravelly or sandy soil, but it is not found in flat grounds, except in very dry land, for though the seeds vegetate there, the winter wet decays the roots, which are otherwise biennial.

Very common in the midland and western, but rare in the eastern, counties. (Oliver's Mount, near Scarborough. Mr. Travis. Abundant in the county of Durham, but becomes scarce to the north of the Tyne, though it may be noticed in the neighbourhood of Rothbury and Roathley, in Northumland. Mr. Winch. E.) B. June—July.*

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* (Foxglove was not unknown to the ancients as a medicinal plant, and its celebrity as a vulnerary was marked in Italy during the middle ages by the proverb "*Aralda tutte le piaghe salda:*" but it was reserved for our author more scientifically to ascertain its real virtues, and thus not only to extend his own reputation, but to assuage the sufferings of humanity. The writer of the Monthly Review for Feb. 1824, says, "In 1785 Dr. Withering published his 'Account of the Foxglove,' (a treatise which has been reprinted with the MEMOIRS and TRACTS of the author, in two vols. 8vo. 1822), which forms beyond doubt the most important point in his medical career. For ten years, he had been engaged in studying the properties of this powerful drug; and even after this long period, it is probable that he would still have delayed to give his opinions on the subject to the public, had he not found that measure necessary for the purpose of protecting his own fame, and his just right to the merit of the discovery. Those who are most intimately acquainted with the history of medicine can best tell what multitudes of drugs have been discovered, lauded, universally employed, and in no long time consigned to neglect and oblivion; but the Foxglove is at this day acknowledged to possess all the virtues which its discoverer claimed for it, viz. "a power to control the action of the heart, and to increase the secretion of the kidneys," p. 165. As a remedy for various kinds of dropsy, particularly that hitherto almost incurable disease Hydrothorax, its importance has been amply decided. It has been more recently employed as a sedative, and has proved serviceable in retarding the undue quickness of pulse, in many cases of pulmonary consumption and other inflammatory action; and yet more permanently advantageous in abating maniacal excitement, according to the prediction of the author. (Vid. Report of the Committee of the House of Commons on the state of Lunatic Asylums, 1815: passim.) "From every part of Dr. Withering's work," adds an anonymous writer, "the reader may promise himself instruction:"—it is a book which, according to the public testimony of the celebrated Professor Cullen, "should be in the hands of every practitioner of physic." (Mat. Med. 4to. Ed. p. 555.) The valuable qualities of this very handsome plant have not been inappropriately commended by S. H.—

"The *Foxglove's* leaves, with caution giv'n,
Another proof of favouring Heav'n
Will happily display;
The rapid pulse it can abate;
The hectic flush can moderate;
And, blest by Him whose will is fate,
May give a lengthen'd day."

It stands recorded, and by a female too, that "women of the poorer class, in Derbyshire, drink large draughts of Foxglove tea, as a cheap means of obtaining the *pleasures*, or

LINNÆ'A.* *Calyx* double, that of the fruit four-leaved, that of the flower with five divisions, superior: *Bloss.* bell-shaped : *Berry* dry, three-celled.

L. BOREA'LIS.

(*Hook. Fl. Lond.* 199—*E. Bot.* 433. E.)—*Fl. Dan.* 3—*Blackw.* 597—*Fl. Lapp.* 12. 4—*Kniph.* 9—*Ludw.* 142—*H. Ox.* v. 2. 19.

Stems thread-shaped, from three to six feet long, trailing. *Leaves* opposite, roundish-egg-shaped, with two or three serratures on each side, ending in leaf-stalks. *Branches* alternate, undivided, upright, an inch long, bearing six or eight leaves. *Fruit-stalks* terminating the older branches, solitary, a finger's length, upright. *Blossom* white on the outside, flesh-coloured within. (In the night emitting a fragrant odour like the *Spiræa. Berry* dry, three-celled. *Seeds* solitary, or in pairs. Linn. E.)

TWO-FLOWERED LINNÆA. First found in an old fir-wood at Inglismaldie, Kincardineshire, by Prof. J. Beattie, jun. In fir-woods at Craibstone, six miles from Aberdeen. Mr. Anderson. (Other stations have since been observed in Scotland; and in England it has been discovered by Miss

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the forgetfulness, of *intoxication!*" *A scandalum magnatum* on the sex, we would fain believe.—In particular districts it may be found in vast profusion. The heights of Haldon, above Teignmouth, to the left of the road leading towards Dawlish, present many acres so thickly covered with Foxglove as to be worthy the attention of the apothecaries' herbarists, who might from that spot with little trouble obtain a genuine and ample supply, and thus avoid the serious disappointment too frequently arising from the substitution of *Verbascum*, (Mullein) or some other inefficacious herb. It should be particularly observed, that the leaves, by being kept to a second year, lose their strength, and the diuretic qualities become much diminished. It is therefore necessary to gather the plant fresh every season. The Foxglove in its most ample dimensions is really a superb plant. Mr. W. Christy assures us he gathered a specimen in the vicinity of Tintern Abbey, which measured in height seven feet, nine inches; length of the spike four feet, ten inches; number of flowers thereon three hundred and eleven! Nor are its beautiful blossoms unworthy the attention of the Entomologist, for therein may be occasionally find a variety of little beings, attracted by the convenience of repose, shelter, or sustenance:—

> "The *Foxglove* now in crimson tresses rich,
> Depends, whose freckled bells to insect tribes
> Afford a canopy of velvet bliss."

And, especially, as in a favourite haunt :—

> ———— "Bees that soar for bloom,
> High as the highest peak of Furness Fells,
> Will murmur by the hour in *Foxglove* bells." Wordsworth. E.)

* (This humble Lapland plant was named by Gronovius, with the concurrence of LINNÆUS himself, in allusion to the unobtrusive habits of the great philosopher, whose genius, immortal as it now appears, was long in obtaining due consideration. This celebrated and most enlightened reformer of Natural History, the son of a Swedish clergyman, was born at Rashult, in 1707, and by extraordinary merit and the publication of various elaborate performances, succeeded to the Professorship of Botany and Medicine at Upsal, received the honour of knighthood from his sovereign Adolphus, and was ultimately elevated to the rank of nobility. He died in 1778, but not till his fame, established on an imperishable foundation, had extended throughout the civilized world.

> —— "Quel lieu desert n'est plein de sa memoire ?
> Il fit de chaque plante un monument de gloire."—Delille. E.)

Emma Trevelyan, likewise in an old fir-plantation, at Catcherside in the parish of Hartburn, four miles west of Wallington, Northumberland. E.)
P. June.*

SIBTHORP'IA.† *Cal.* with five divisions : *Bloss,* wheel-shaped, with five divisions : *Stamens* converging in pairs : *Capsule* compressed, roundish, two-celled : partition transverse : *Seeds* few.

S. EUROPŒ'A. Leaves between kidney and target-shaped, scolloped.

(*E. Bot.* 649. E.)—*Pluk.* 7. 6—*Pet.* 6. 11.

Stems numerous, a foot long, thread-shaped, limber, not much branched, trailing, often radicating, near the leaf-stalks, hairy. *Leaves* (rather succulent, paler underneath, E.) alternate, remote, on leaf-stalks, heart-orbicular, one side opening near the centre, horizontal, with six or seven slight lobes, the lateral ones the smallest, blunt, about the breadth of a pea, sprinkled with small, simple, scattered, transparent bristles. *Leaf-stalks* short, ascending. *Fruit-stalks* thread-shaped, from the bosom of the leaves, upright, solitary, as long as the flower, often shorter than the leaf-stalks, pendulous after flowering. *Floral-leaves* awl-shaped, one towards the point of the fruit-stalks. *Calyx* hairy. *Blossom* minute, purplish at the base. *Stamens* (nearly, E.) equal. Linn. *Herbage* pale and delicate. *Leaves* half an inch over, with about five lobes. E.)

CREEPING SIBTHORPIA. CORNISH MONEY-WORT. Shady marshy places, springs and rivulets. Cornwall and Devon, frequent. Ray. (By Buckbarrow Well, in Longsleadale, Westmoreland. Mr. Robson. Meadows at Honington, Lincolnshire. Blackstone. Under a damp, shady wall, on the left, about two hundred yards before reaching Pont y Pridd, from Cardiff. Sir J. Cullum. Bot. Guide. Near the bottom of Comer hill, on the road from Tralee to Dingle, Ireland. Mr. J. T. Mackay. Eng. Fl. E.)
P. July—Sept.

LIMOSEL'LA.‡ *Cal.* five-cleft : *Bloss.* five-cleft, bell-shaped, nearly equal : *Stamens* converging in pairs : *Germen* two-celled : *Caps.* often one-celled, two-valved, many-seeded.

L. AQUAT'ICA. Leaves spear-shaped, (somewhat spatulate ; foot-stalks twice as long as the flower-stalks. Sm. E.)

(*Hook. Fl. Lond.* 62—*E. Bot.* 357. E.)—*Fl. Dan.* 69—*Hall. Jen.* 6. 3, *at p.* 295—*H. Ox.* xv. 2. *f.* 2—*Pluk.* 74. 4—*Pet.* 65. 12.

(A minute creeping *plant*, throwing up clusters of narrow, spathulate, glabrous *leaves*, one to two inches long. *Flowers*, very small, axillary, peduncled, pale rose-colour. *Stam.* nearly equal. Hook. E.)

MUDWORT. Muddy and gravelly places liable to be flooded, and where waters have stagnated during winter. A. July—Sept.

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* (The leaves infused in milk are serviceable in sciatica and other rheumatic pains. In Sweden, also the disease affecting the feet of sheep is cured by a fomentation prepared from this plant. Fl. Suec. Dr. Swediaur's experience confirms its efficacy in rheumatic gout. Its qualities appear to be astringent and diuretic, E.)

† (So called by Linnæus in honour of Dr. Humphry SIBTHORP, Professor of Botany at Oxford. E.)

‡ (Diminutive of *limus*, mud ; in which it delights to grow. E.)

OROBAN'CHE.* *Cal.* of two lobed leaves : *Bloss.* gaping : *Germen* resting on a gland : *Caps.* one-celled, two-valved, many-seeded.†

(1) *Floral-leaves solitary.*

O. MA'JOR. Stem unbranched, pubescent; (blossom inflated; upper lip nearly entire; lower in three equal segments : stamens smooth : style downy. E.)

Curt. 232—(*E. Bot.* 421. E.)—*Kniph.* 7—*Tourn.* 81, *Obranche*—*Riv. Mon.* 89. 1, *Orobanche*—*Ger.* 1130. 2—*Pet.* 69. 10—*Park.* 229. 1. *a*—*Matth.* 536—*Lonic.* ii. 24. 1.

(Whole *plant* of a dull purplish brown, becoming dry and membranous. E.) *Root* large, fleshy, oval, scaly, (with a few fibres. E.) *Leaves* none. *Stem* eight to twelve inches high, angular, clothed with dry scattered scales. *Flowers* (in a spike of fifteen to twenty, large, a little incurved, E.) cylindrical, brownish rust-coloured. *Summit* two yellow, globular lobes. *Seeds* exceedingly numerous. Relh. *Floral-leaves* spear-shaped, solitary, tapering.

COMMON BROOM-RAPE. (Irish : *Muchog.* Welsh : *Corn yr afr; Paladr hir.* E.) Parasitic, in dry ground, on the roots chiefly of diadelphous plants, as *Spartium scoparium, Genista tinctoria, Trifolium, Ulex, Orobus tuberosus, Hieracium sabaudum* and *Centaurea Scabiosa.* Also in corn-fields in a sandy soil, which have probably had Broom growing on them. Broom Hills, very frequent. Mr. Woodward. Shrawley Wood, Worcestershire. Mr. Ballard. On a dry bank, near Clifton upon Teme, Worcestershire. Dr. Stokes. Raby Park, Durham. Mr. Robson. (Near Allerton Hall, in the road to Liverpool. Mr. Robert Roscoe. In Scots Wood Dean, Northumberland. Winch Guide. Near Burntisland. Hooker. Fl. Scot. Ken-wood, Hampstead, Middlesex; Little Baddow Common, Essex. Mr. W. Christy. Walls of Conway Castle, opposite the Suspension Bridge. B. Bottield, Esq. By the side of a foot-path at the edge of the cliffs west of Bitton, near Teignmouth, July, 1819. E.) P. May—June.

(*O. caryophyllacea.* Sm. Linn. Tr. vol. iv. p. 169. greatly resembling the above in habit and size, and not very clearly ascertained to be specifically distinct, has been observed by Mr. G. E. Smith on the roots of *Galium Mollugo,* near Sandgate in Kent, and eastward to Dover, who further remarks that

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[*] (So called, according to Theophrastus, from ὄροβος, the Orobus, Tare, or Vetch, and ἄγχω, to strangle, (q. d. *Strangle Tare*); from its supposed power of destroying the plant on which its grows. Such at least is the literal translation, though there is reason to believe the Greek compound was applied by Theophrastus to some species of climbing plant, and that our *Orobanche* rather accords with the description by Dioscorides and Pliny. In the former instance the injury is effected by mechanical constriction ; in the latter, by exhaustion of the juices of the plant from which it derives its principal nutriment. E.)

[†] In Linn. Tr., vol. 4, will be found a paper by the Rev. Charles Sutton, illustrative of this singular tribe of plants ; by which it appears that they are not entirely parasitic, but acquire no small portion of sustenance from the soil by means of radical fibres. These plants have an acrid, astringent taste, and are rejected by all kinds of animals except the minuter *Cimices* and *Thripses.* They are acotyledonous : for when a seed has attached itself to the root of a living plant, it swells into a pellucid squamose gem or bulb ; and after throwing out around the point of adhesion several tender fibres, it pushes up at once into a perfect plant, without any lateral lobes or cotyledons, the *capitulum* resembling a young head of asparagus. This process is well represented in Linn. Tr. vol. 4, t. 17. E.)

its peculiar characteristic, the scent of cloves, "*garyophyllum olens,*" (Bauh.) is remarkably developed if the plant be flowered in water, Vid. pl. iii. in Obs. on the Plants of S. Kent, by Gerard. Edwards. Smith. E.)

(O. **ELA'TIOR.** Stem undivided: blossom tubular, lower lip in three acute equal segments: stamens downy: style smooth.

Linn. Tr. vol. 4. *t.* 17—*E. Bot.* 568—*Fl. Dan.* 1338.

The Rev. C. Sutton, who first discriminated this species, states that it has usually been confounded with *O. major.* It is taller and yellower than that plant, also bearing a much more numerous assemblage of flowers; as many as a hundred having been counted on one spike. Smith observes that the *leaves* of the *calyx* are united at the base before; the *blossom* less inflated than in *O. major ;* its border much curled and fringed; upper lip sometimes a little cloven. *Stamens* inserted into the tube above its base, smooth on the upper part. *Stigma* inversely heart-shaped, yellow.

TALL BROOM-RAPE. Not uncommon in clover-fields, balks, and thickets; but not on the roots of Broom or Furze. About Gunton, Kelling, Sheringham, Catton, and Costesy, Norfolk. Rev. C. Sutton. At Houxton, Comberton Hill, between Shelford and Stapleford, Cambridgeshire. Rev. R. Relhan. (In Cawsey Wood, Durham. Mr. Winch. Near Leiston Abbey, Suffolk. Mr. W. Christy. In July, 1825, Mr. Frederick Russell gathered a specimen on the sea shore, a quarter of a mile from Clevedon New Inn, Somersetshire, which measured in height two feet one inch and a half, and was as thick as a man's thumb. E.) P. July—Aug. E.)

(O. **MI'NOR.** Stem simple: blossom tubular: upper lip undivided: lower with three curled segments, the middle one lobed: stamens fringed : style smooth.

E. Bot. 422—*Fl. Dan.* 1219.

Smaller in all its parts than *O. major;* and more generally of a purplish cast, though it has been sometimes found by the Rev. C. Sutton of a pale yellow colour. *Floral-leaves* solitary. *Flowers* scarcely at all tumid. *Calyx-leaves* more unequally divided though not invariably so. *Stem* inclined to zigzag in a slight degree. *Stamens* in their lower part thickly ciliated with projecting hairs, a distinction which never fails. *Stigma* purple. E. Bot. Mr. Sutton remarks that the stigmas are not well represented in the above-cited figure of E. Bot., and that the spike is frequently much longer, bearing more numerous and more thickly set flowers than are there represented.

LESSER BROOM-RAPE. Plentiful in Kent, as found by Mr. Joseph Rayer, whence Sir J. E. Smith conjectures it to be the *O. flore minore* of Dill. in Ray Syn. In various parts of Norfolk ; especially in clover-fields, to the roots of which it seems attached. Near Sheringham. Rev. C. Sutton. (A destructive weed in Surry and Sussex, highly injurious to the clover crops : also among clover at Brockham and Betchworth, Surry. Mr. Winch. Covering a field near Matford, on the Starcross road about half a mile from Alphington church, Devon. Rev. H. T. Ellicombe. E.) A ? July. E.)

(O. **RU'BRA.** Stem simple, : blossom tubular, upper lip cloven : lower in three nearly equal segments : stamens fringed at the base : germen and style at their summits : bracteas solitary.

Hook. Fl. Lond. 105—*E. Bot.* 1786.

Roots creeping. *Stem* about a foot high, bulbous and most scaly at the base, ending in a spike of nearly twenty flowers, and clothed, as well as the upper part of the blossom, with glandular viscid hairs. *Floral-leaves* spear-shaped, acute. *Calyx-leaves* undivided. *Blossom* very slightly tumid, fringed with glandular hairs. *Style* red. The whole plant above ground is of a purplish red. The *flowers* smell powerfully like a honeysuckle or pink. E. Bot.

RED FRAGRANT or BASALTIC BROOM-RAPE. First discovered on a Basaltic rock at Cave hill, near Belfast, Aug. 1805, by John Templeton, Esq) (Dr. Hooker considers that this plant has a peculiar predilection for Basaltic rocks, and, therefore, suggests that it might with propriety be named *O. basaltica.* On the Island of Staffa, and the Giant's Causeway, (also basaltic), springing out of a very thin layer of soil, having no appearance of being parasitic. Fl. Lond. Near Seafield Tower between Kirkcaldy and Kinghorn. Maughan. Grev. Edin. Ards, Donegal. Mr. Murphy. E.)

(2) *Floral-leaves ternate.*

(O. CÆRU'LEA. Stem simple: blossom tubular: upper-lip cloven and notched : lower in three equal entire segments : stamens smooth : floral-leaves three : style downy.

E. Bot. 423—*Jacq. Austr. t.* 276—*Gmel. Fl. Sib.* v. 131. *t.* 46. *f.* 1. E.)

Stem scaly, slightly downy ; (about a foot high. E.) *Scales* oval-spear-shaped, *Spike* loose. *Floral-leaves* oval-spear-shaped, somewhat keeled, as long as the calyx. *Calyx* with four deep divisions ; segments awl-shaped, the two outer the largest, the inner one next the stem very small. *Blossom tube* longer than the calyx ; *upper lip* short, cloven, roundish : *lower* three-cleft. *Stamens* within the flower. Woodw. (In general less pubescent, and of a more decided blue colour than either *O. major* or *minor. Blossom* pale violet, with a downy, white, divided palate. *Stem* not always unbranched, according to the observation of Rev. C. Sutton.

PURPLE BROOM-RAPE. *O. cærulea.* Vill. *Orchis abortiva* of the older British authors. *O. purpurea.* Jacq. *O. ramosa.* var. 2. With. Ed. 4. Hilly pastures on the north coast of Norfolk.' A single specimen was found in 1779, by Mr. Scarles, near Northreps, and several more in 1796, near Sheringham, by Mr. Skrimshire, of Wisbeach; also by the Rev. C. Sutton at Beeston, near Cromer. E. Bot. Near Alton, in Hampshire. Ray. Among rocks at Steephill, Isle of Wight. Mr. Caley, in autumn, 1800. P.. July. E.)

O. RAMOSA. Stem branched, five-cleft: (segments obtuse, entire: floral-leaves three. E.)

E. Bot. 184; *the root in a diseased state. Woodw.*—*Sabbat.* iii. 12—*Cam. Epit.* 311—*J. B.* ii. 781. 2—*Clus.* i. 271. 1—*Ger. Em.* 1312. 3—*Pet.* 69. 11.

Root a solid bulb, (sometimes tumid from injury or disease, E.), naked, or furnished with one or two spear-shaped sessile scales, and numerous short, thick, fibres, affixed laterally, adhering and intermixed with the fibres of the roots of hemp or other plants. *Stem* a continuation of the bulb, nearly cylindrical when fresh, angular when dry, slightly downy, brown or dirty yellow, naked, or furnished with very few scales. *Branches* either immediately from the root, or alternate, swelling at the base, nearly upright, with each a scale at the base. *Spikes* terminal. *Floral-leaves* oval-spear-shaped, somewhat keeled, sessile. *Calyx* segments pointed, the two outer largest, the inner halved, the sides next the stem being wanting. *Blossom tube* ventricose, yellow at the base, the upper part and lips bluish purple, hairy on the outside; *upper lip* roundish, cloven, *lower lip* broad, three-cleft, the middle segment largest, and with two yellowish prominencies at the mouth. *Filaments* within the tube, bluish. *Anthers* yellow. *Style* longer than the filaments and bending towards them, bluish. *Summit* blunt. Woodw. *Stem* about a span high; generally, but not always, branched.

BRANCHED BROOM-RAPE. Corn-fields and dry pastures. (Mr. Sutton has found it only in rich moist soil. E.) Isle of Sheppey, and near Feversham and Rochester; about Glastonbury; and in Devonshire and Hants. Hudson. (In a Hemp-field on the opposite side of the river at Mettingham, near Beccles; and Brome, near Bungay, Suffolk, on the roots of hemp and *Galeopsis Tetrahit,* both annual plants. Mr. Woodward. Hemp-fields near Wisbeach. Rev. R. Relhan. (Among hemp at Outwell, Norfolk. Rev. C. Sutton. E.) A. June—Sept.*

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* (The different species of Broom-rape are probably much alike in quality, viz. astringent and vulnerary. Where these plants abound they must be treated by the agriculturist as the most destructive weeds, which will fatally impoverish any other crop. E.)

CLASS XV.

TETRADYNAMIA.*

SILICULOSA.

(1) *Pouch not notched at the end.*

ALYS′SUM. *Pouch* egg-shaped, crowned with the style: valves concave: *Filaments* toothed: (*Cotyledons* accumbent. Br. E.)†

(CAME̱LI′NA. *Pouch* entire; valves tumid: *Seeds* numerous, not bordered: *Filaments* without teeth: *Cotyledons* incumbent. Br. E.)

DRA′BA. *Pouch* with nearly flat valves: *Style* none: (*Cotyledons* accumbent. Br. E.)

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* (The importance of the plants of the natural order of *Cruciferæ* to mankind, and the highly antiscorbutic powers of which they are possessed, have been indicated in our first volume. This latter quality appears to depend upon a certain acrid volatile oily principle, the chemical nature of which is imperfectly known; and it is observed that when any cruciferous plants are found to be eatable, either from culture or other circumstances, the improvement arises from a reduction of this peculiar principle. Plants of this order are also believed to possess diuretic and diaphoretic properties. *Cruciferæ* are always eatable when their texture is succulent, as in the roots of the Radish and Turnip, and in the leaves of the Cabbage tribe. A further diminution of the acrid principle is produced by blanching. These vegetables are supposed to possess a greater share of azote than any others; which occasions their fetid smell when fermented. The embryos of all the order abound in oil, whence many species are employed with much advantage for expressing, either for the table, or for supplying lamps. Some are extremely beautiful and fragrant; and others among the most interesting of alpine plants. The more common kinds are of considerable utility to bees, as affording them a principal supply of spring food. They are also much frequented by different White Butterflies, as *Pontia Brassicæ, Chariclea, Rapæ, metra, Napi, &c.* well described and figured in Mag. Nat. Hist. vol. ii. p. 227. It is asserted that the seeds of cruciform plants, as also grain of all kinds, by steeping twelve hours in river water, (never in well-water,) and adding to each quart of water about fifteen drops of a strong solution of chlorine, the whole well mixed, and the maceration of the seed continued for six hours longer in the sun-light, and under a bell-glass, will be much increased in vegetative power, and, with the water of maceration poured over the ground when sown, will produce a crop three or four times as great as that obtained under ordinary circumstances; a fact worthy the attention of the agriculturist in seasons of scarcity, or when the seed may have suffered from depredation. Vid. Mag. Nat. Hist. E.)

† (The circumstance of the pouch being notched at the end, or otherwise, affords no certain characteristic of this genus. E.)

SUBULA'RIA. *Pouch* with half-egg-shaped valves: *Style* shorter than the pouch: (*Cotyledons* linear, incumbent. Br. E.)

(**CAKI'LE.** *Pouch* of two single-seeded articulations; upper articulation with an erect sessile seed, the lower one with a pendulous one, (sometimes abortive): *Cotyledons* accumbent. Br. E.)

CRAM'BE. *Pouch* deciduous; globular; like a dry berry: *Filaments* four, long ones cloven at the end: (*Cotyledons* accumbent. Br. E.)

I'SATIS. *Pouch* deciduous; spear-shaped; with one seed: (*Cotyledons* incumbent. Br. E.)

VEL'LA. *Pouch* with valves only half the length of the partition: (*Cotyledons* accumbent. Br. E.)

[Coronopus Ruellii.]

(2) *Pouch notched at the end.*

I'BERIS. Two outermost petals the largest: (*Pouch* obcordate; one seed in each cell. E.)

(**TEESDA'LIA.** *Pouch* emarginate; valves keel-shaped: *Seeds* two in each cell: *Filaments* each having a scale at its base: *Cotyledons* accumbent. Br. E.)

COCHLEA'RIA. *Pouch* heart-shaped: *Valves* blunt: *Seeds* numerous.

(**CORO'NOPUS.** *Pouch* nearly entire, compressed, rugged, without valves, two-seeded. E.)

LEPID'IUM. *Pouch* heart-shaped: *Valves* sharply keeled: (*Cotyledons* mostly incumbent: *Seeds* solitary. E.) *

TALAS'PI. *Pouch* inversely heart-shaped, cloven: *Valves* (in some species) bordered; keeled: *Seeds* numerous.

SILIQUOSA.

(1) *Calyx closed; the leafits approaching lengthwise.*

RAPH'ANUS. (*Pod* jointed, tumid, valveless: *Seeds* globular. E.)

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* (In *L. petræum*, two in each cell. E.)

ERYS'IMUM. *Pod* four-sided: (*Seeds* not bordered: *Cotyledons* incumbent: *Stigma* capitate, sometimes notched, with the lobes lying open: *Cal.* closed. Br. E.)

CHEIRAN'THUS. *Germen* with a gland on each side its base: (*Cal.* converging, the two opposite leaves gibbous. E.)

HES'PERIS. *Glands* within the shorter stamens: *Petals* oblique: (*Pod* angular: *Summit* divided into approaching lobes: *Seeds* not bordered. E.)

AR'ABIS. *Glands* four; within the leafits of the calyx: (*Pod* linear, flat: *Seeds* in a single row. Br. E.)

BRAS'SICA. (*Glands* two within the shorter stamens; two outside the longer: *Calyx* closed: *Pod* nearly cylindrical, beaked, with two valves. E.)

TURRI'TIS. *Petals* upright: (*Pod* linear, keeled: *Seeds* in a double row. Br. E.)

DENTA'RIA. (*Pod* lanceolate; opening elastically: *Valve* rolling back: *Seeds* on flat, dilated stalks. E.)

(2) *Calyx open, the leafits wide asunder upwards.*

CARDAM'INE. (*Pod* linear, opening elastically: *Valves* rolling back: *Seeds* on capillary stalks. E.)

SINA'PIS. (*Pod* opening, cylindrical, with a prominent partition: *Calyx* expanding horizontally: *Petals* erect. E.)

(NASTUR'TIUM. *Pod* rounded, (sometimes short.) *Valves* concave, neither ribbed, nor keeled: *Cotyledons* accumbent: *Cal.* spreading. Br. E.)

SISYM'BRIUM. *Pod* rounded or angular: *Cotyledons* incumbent, (sometimes obliquely) flat: *Cal.* spreading, (sometimes nearly erect. Br. E.)

(BARBA'REA. *Pod* four-edged: *Cotyledons* accumbent: *Seeds* in one row: *Cal.* erect; shorter filaments with intermediate *glands.* Br. E.)

[Brassica Napus.]

SILICULOSA.

ALYS'SUM.* *Pouch* entire, crowned with the style: *Valves* concave, parallel to the partition: (two of the *filaments* marked with little teeth. E.)

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* (Possibly from α, privative, and λύσσα, madness; it formerly being considered efficacious against hydrophobia. E.)

(A. **MARIT'IMUM.** Stem somewhat woody, much branched, spreading: leaves spear-shaped, acute, entire, hoary with adpressed hairs: stamens simple: seeds solitary.

E. Bot. 1729—*Curt. Mag.* 101.

Leaves alternate. *Blossoms* numerous, white, fragrant. *Stamens* and *claws* of the *petals*, turning purple in decay. *Pouches* in long clusters, two-celled, two-seeded, a little convex. E. Bot.

SWEET ALYSSUM. *A. maritimum.* Willd. *A. minimum.* Linn. Half a mile from the sea near Aberdeen, added to the British Flora by Professor W. Duncan of Aberdeen. Since found on the maritime cliffs of Devon, at Budleigh-Salterton, by Dr. Hooker; but suspected not to be wild there.

In the more genial climates of the South, perennial; in this country more frequently annual. E.)*

(CAMELI'NA.† *Pouch* sub-ovate, many-seeded; valves tumid: *Filaments* without teeth. E.)

(C. **SATI'VA.** Stem herbaceous: leaves spear-arrow-shaped: pouch inversely egg-shaped, bordered, thrice as long as the style. E.)

(*Hook. Fl. Lond.* 70—*E. Bot.* 1254. E.)—*Fl. Dan.* 1038—*Kniph.* 11—*Trag.* 655—*Lonic.* i. 154. 1—*Ger.* 213. 2—*Dod.* 532. 1—*Lob. Obs.* 111. 3, *and Ic.* i. 224. 2—*Ger. Em.* 273. 3—*Park.* 868. 2—*Pet.* 48. 11—*H. Ox.* iii. 21, *row* 3. 2—*J. B.* ii. 892—*H. Ox.* ii. 21, *row* 2. 1. *f.* 4—*Matth.* 1172.

Stem (two to three feet high, E.) cylindrical below, somewhat angular above, slightly hairy, clothed with leaves. *Leaves* alternate, spear-shaped, arrow-shaped at the base, half embracing the stem, slightly toothed, hairy. *Blossom* yellow. *Pouches* on long fruit-stalks, terminated by a long style; *partition* extending beyond and forming a strong ridge round the seed-vessel. Woodw. (*Petals* blunt, entire. *Seeds* slightly angular, inversely egg-shaped, never notched at the end. Fl. Brit. E.)

GOLD OF PLEASURE. (*C. sativa.* Crantz. Br. in Ait. Pers. De Cand. Hook. Sm. Grev. *Myagrum sativum.* Linn. Lightf. Oed. Willd. *Moenchia sativa.* With. Roth. Hull. *Alyssum sativum.* Fl. Brit. E. Bot. E.) Corn-fields; among flax often plentifully, but apparently imported with it from foreign countries. Near Bridport and Lime in Dorsetshire. Heydon, Norfolk. Rev. Mr. Bryant. (In Hezlington field near York. Sir Thomas Frankland. Out of St. Giles's Gate, Norwich, by the road side. Sir J. E. Smith. Lackenheath Field, by Wangford, Suffolk. E. Bot. (On Ballast Hills, and waste ground, Durham; and Jesmond fields, near Newcastle. Mr. Winch. Calton Hill. Mr. D. Steuart. Grev. Edin. E.)
A. May—June.‡

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* (It is commonly cultivated in gardens for its agreeable honey-like scent; and we should suppose might prove a valuable acquisition to the apiarian border. E.)

† (Supposed a corruption of *Chamælinum*; but the appropriate meaning is not very intelligible. E.)

‡ It is cultivated in Germany for the sake of the expressed oil of the seeds, which the inhabitants use for medicinal, culinary, and economical purposes. The seeds are a favourite food with geese. Horses, cows, goats, and sheep eat it.

(**ÇAKI′LE.** *Pouch* angular, of two joints, each of one cell, without valves; the uppermost deciduous: *Seeds* solitary. E.)

(C. MARIT′IMA. Pouch egg-shaped, smooth, two-edged and two jointed; (leaves fleshy, pinnatifid, blunt. E.)

(*Hook. Fl. Lond.* 160. E.)—*E. Bot.* 231—*Fl. Dan.* 1168—*Kniph.* 8—*Lob. Obs.* 110. 3, *and Ic.* i. 223. 1—*Ger. Em.* 248. 5—*Park.* 821. 1—*H. Ox.* iii. 6. 20—*Pet.* 46. 6—*J. B.* ii. 868. 1.

Plant smooth, sea green, (succulent. E.) of a saline taste. *Pouches* deciduous, and leaving a cloven base behind. Linn. *Root* slender, woody, running deep into the sand, and terminated by a few rigid fibres. *Stem* (six to twelve inches high, E.) woody, much branched. *Leaves* oblong wedge-shaped, flexuose, sessile, deeply cut or wing-cleft. *Flowers* pale purple. *Fruit-stalks* short. *Pouches* large and fleshy. Woodw. *Leaves* wing-cleft, fleshy, smooth, the terminal segment largest. *Glands*, one within each shorter stamen, and one on the outside each pair of longer stamens. (After blossoming, the plant assumes a totally different appearance, for the corymbs of flowers, which were almost embosomed in the leaves, run out into long branches, whose conspicuous seed vessels thus become racemed. Fl. Lond. E.)

Sea Rocket. (Welsh: *Hegydd y morlan. C. maritima.* Willd. De Cand. Br. Sm. Hook. Grev. *Bunias Cakile.* Linn. Lightf. With. Oed. Fl. Brit. E.) Sea shore, in deep sand, just above high water mark. Yarmouth, Norfolk; Southwold, Suffolk. Mr. Woodward. Coast of Anglesey. Welsh Bot.; and Caroline Park. Grev. Edin. (North Shore, near Liverpool; Ryde, Isle of Wight. Dr. Bostock. On the west shore near Folkstone harbour. Mr. G. E. Smith. E.) On the sandy Den at Teignmouth, plentiful. A. June—Oct.

CRAM′BE.* The four longer filaments cloven at the end, one of the clefts bearing the anther: *Seed-vessel* coriaceous, globular, deciduous.

C. MARIT′IMA. Leaves, (roundish, glaucous, wavy; E.) they and the stem very smooth.

(*E. Bot.* 924. E.)—*Fl. Dan.* 316—*Ger.* 248. 16—*Pet.* 48. 12 —*Ger. Em.* 315. 15—*H. Ox.* iii. 2. 16—*Park.* 270. 4. *b.*—*Lob. Adv.* 92, *and Ic.* i. 245 —*Park.* 270. 4. *a.*—*Ger.* 248. 15—*J. B.* ii. 830. 2; (*not Kniph.* 10, *C. maritima.*)

Whole *plant* smooth. *Stems* many, spreading, and much branched. *Root-leaves* on leaf-stalks, very large, spreading wide on the ground, variously waved, jagged, and indented, fleshy, sea-green, sometimes tinged with purple. *Stem-leaves* sessile. *Fruit-stalks* long. *Flowers* white. *Pouch* at first egg-shaped, terminated by a blunt summit, afterwards nearly globular. Woodw. *Blossom* large, white, (sometimes yellowish, and the claws of the petals and filaments often purple.

Sea Colewort. Cliff or Sea Kale. (Welsh: *Ysgrydd arfor.* E.) Sandy sea shores. Near Mevagissey, Cornwall. Mr. Watt. Between Dunwich and Southwold on the Suffolk coast, abundantly. Roosebeck in Low Furness, Lancashire. Mr. Woodward. E.) Chalk cliffs at Weymouth; Lulworth cove, and many other places on that coast. Abundant on the sand hills of the Lincolnshire coast. Sir J. Banks. Also at Mundesley, Norfolk. Sir J. E. Smith. (Near Bodowen mill, Anglesey. Welsh Bot. Near Fast Castle, Berwickshire. Lightfoot. On the cliffs of the Dover coast; and in similar situations of Devonshire very frequent, where it has long been used by the inhabitants as an agreeable esculent, the young shoots, nearly buried beneath the sand, being white, tender, and sweet. E.) P. May—June.*

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* (From κραμβος, dry, arid; as growing in sandy soil. E.)

I′SATIS.† *Pouch* entire, bordered, oval-spear-shaped, compressed, one-celled, one-seeded, crowned by the style.

1. TINCTO′RIA. Root-leaves scolloped: stem-leaves arrow-shaped, entire: (pouch abrupt, smooth, thrice as long as broad. Sm. E.)

Cultivated.—*Fuchs.* 332—*J. B.* ii. 909. 2—*Matth.* 635—*Dod.* 79. 2—*Lob. Obs.* 190. 1. *and Ic.* i. 352. 1—*Ger. Em.* 491. 2—*Pet.* 48. 9.

Wild.—*E. Bot.* 97—*Fuchs.* 331—*J. B.* ii. 909. 1—*Matth.* 634—*Dod.* 79. 1—*Lob. Obs.* 189, *and Ic.* i. 351. 2—*Ger. Em.* 491. 1—*Park.* 600. 3—*Trag.* 256—*Ger.* 394—*H. Ox.* iii. 15. 10 *and* 11—*Blackw.* 246—*Lonic.* i. 149. 1.

Pouches on slender fruit-stalks, hanging down. Woodw. (chesnut-coloured, shining. E.) *Stem* branched, woody, (two feet high, wand-like, leafy, smooth, panicled. E.) *Leaves* (glaucous, E.) the uppermost strap-spear-shaped. *Calyx* yellow. *Petals* notched at the end, yellow. *Pouches* chesnut-coloured, (shining. E.)

WOAD. (Irish: *Gurmiu.* '*Glastum sativum.* Ger. Ray. *G. sylvestre.* Ger.' Em. *Isatis sylvestris.* Fuchs. Matth. Camer. Schreb. *I. tinctoria.* Linn. E.) Corn-fields, and borders of corn-fields, but rare. Hudson. New Barnes near Ely. Relhan. By the river Wear, near Durham. Mr. Robson. (In a field at Barton Bendish, Norfolk, where it is never known to have been cultivated. Rev. R. Forby. By the church at Long Reach, Kent. Martyn. Banks of the Wear, between Framwell Gate and New Bridges, Durham. Mr. Winch. E.) B. June—July.‡

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* The young and tender leaves are boiled as cabbage, but when full grown and green they are tough, and occasion giddiness. (It is frequently cultivated in gardens, and blanched, and may be readily protected from the severest cold by a covering of sand, or an inverted garden pot, with litter. By forcing, it may be supplied for the table from November till May: and proves an excellent substitute for asparagus; also an useful ingredient in soups.—It was introduced into Covent-garden by the late Mr. Curtis, (who had observed it about Barnstaple), in 1792. We are informed by Sir J. Banks, that this plant has been seen in the Orkneys on sand incapable of bearing any other crop, and has been proved to furnish food for sheep. Horses, cows, goats, and swine also eat it. E.)

† (From the ancient Greek name ἰσάτις; the meaning of which seems to be lost; but it has been invariably connected with the *Glastum* and *Vitrum* of the Romans, supposed to mean our *Woad.* E.)

‡ Woad is much used by the dyers for its blue colour, and as a mordant for many other colours. It is cultivated in Bedfordshire, some parts of Northamptonshire, and Somersetshire, especially in the country around Keynsham, (remarkable also for its beds of *Cornu-Ammonis*, or snake-stones, those "headless coils" which have racked the invention of superstition itself wherever found), whence after being steeped in vats of water, the green fecula deposited at the bottom is washed, made into cakes, and sent to distant manufacturers. Woad requires to be raised on fresh land in good heart, and being an exhausting crop, a high rent is expected. The ground will not admit of being sown with Woad more than twice, a third crop rarely paying the necessary expenses. Hence the gangs of people called Woaders, who make the culture of this herb their peculiar employment, never stay

VEL'LA.* (*Pouch* globular, entire, with a prominent, dilated, flat style, twice as long as the concave valves. E.)

long at the same place, but lead with their families a nomadian life, directed by their principal, wherever he may engage suitable land. The goodness of Woad depends on the luxuriance of the plant, especially on the size and thickness, (or fatness, as it is technically termed), of the leaves. E.) "It is sown about the beginning of March, and cropt about the beginning of May following. It is best in quality in a fair and dry summer, but most in quantity in a moist one. Then they crop it four or five times; the first crop is best. As soon as cut it is carried to the Woad mill, and ground as small as it can be, until it become fit to ball. The balls are laid on hurdles to dry, and when perfectly dried, they are ground to fine powder in the mill. Thus ground it is thrown on a floor and watered, which operation is called couching. It remains to smoak and heat, turned every day, until it be perfectly dry and mouldy, called silvering. It is then weighed by the hundred, and bagged, and thus sent for sale to the dyers. The best Woad is worth 20*l.* or more per ton," (and that quantity is considered a moderate produce from an acre.—Three or four gatherings may be expected from each crop, but the first and second are by far the most valuable, and the imprudent admixture of the latter gatherings, too often deteriorates the finer quality of the former. The price of Woad has declined since the general importation of indigo, not merely in England, but in other European countries; though it is generally admitted that Woad, under more careful management, would equal the colour of that foreign production, (which takes large sums of money out of this country), as it does already exceed it in permanency. The improved culture of this staple British commodity, might be worthy the encouragement of the Society of Arts.—If the general idea be correct, that the aboriginal Britons stained their bodies with the blue colour obtained from this plant, we cannot refuse our assent to its claim to be deemed indigenous, notwithstanding some authorities have pronounced it merely naturalized.

"In times of old, when British nymphs were known
To love no foreign fashions like their own;
When dress was monstrous, and fig-leaves the mode,
And quality put on no paint but *Woad*." Garth.

The relative importance of this article must have been nearly equal to what it now is; nor does any other plant so aptly claim this distinction, though we are fully aware of the difficulty of proving that the following, and other passages, refer solely to it. "Omnes verò se Britanni *vitro* inficiunt, quod cæruleum efficit colorem; atque hôc horribiliore sunt in pugnâ adspectu." Cæs. Bel. Gal. lib. v. 10. All the Britons depict themselves with (*Woad?*) which yields a *blue* colour; and thus is their appearance rendered more terrific in battle.—"Simile plantagini *glastum* in Gallia vocatur, quo Britannorum conjuges nurusque toto corpore oblitæ, quibusdam in sacris et nudæ incedunt, Æthiopum colorem imitantes." Plin. Nat. Hist. lib. xxii. c. 1. In France, a plant, somewhat resembling Plantain, is called *glastum*, (*Woad?*) where with the Britons' wives, and their sons' wives, are coloured all over, and thus appear naked in some religious ceremonies, looking like Ethiopians.—The ancient British word *glâs*, or *glast*, signifying *blue* or *green*, *glass*-coloured, (hence Glastonbury, from the verdant district around that noted spot, Glashampton, &c.) the more modern English term *glass*; and possibly the Latin *glacies*; are all found expressive of something like the same meaning; and are not less applicable to the colour of the plant (*Woad*) itself, "*Glasti* notæ sunt folia *glauca*, ad tingendum utilia," Ray; than to its dying principle: and this has been, with considerable plausibility, attached to *Isatis*. Bishop Gibson says, in Cæsar, Vitruvius, Pliny, and other Roman historians, we read of this same plant under the name of *vitrum*, (also yielding a *blue* colour, ut supra); and here again it is remarkable, we have a word of somewhat similar signification, and possibly a translation on the part of Cæsar of the ancient British name. Thus may the synonymy of these obscure terms be reconciled, if not the application of them to our *Woad* be incontrovertibly established. Vid. *Reseda Luteola.*—It is cultivated on rather an extensive scale at Kesmark in Hungary, and appears equal to the best Spanish Indigo, but the price is as high. Townson's Travels. E.)—Cows eat it; horses, sheep, and goats refuse it.

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* (A name adopted by Galen, and latinized from the Celtic, signifying a sort of Cress. E.)

V. AN'NUA. Leaves wing-cleft: pouches pendent.

(*E. Bot.* 1442. E.)—*Kniph.* 10—*Clus.* ii. 130. 1—*Lob. Obs.* 102. 3, *and Ic.* i. 205. 2—*Ger. Em.* 247. 4—*Park.* 830. 2—*J. B.* ii. 920—*Pet.* 50. 5—*Trew. Pl. Rar.*

Stem (three or four inches high. E.) branches hairy. *Leaves,* segments strap-shaped, toothed, hairy. *Petals* white, (or yellowish, E.) with deep purple veins. *Pouches* bristly, egg-shaped, terminated by the extention of the petition. Woodw.

CRESS ROCKET. ANNUAL CRESSET. On Salisbury Plain, not far from Stonehenge. Ray. (Not found there since. An elegant little plant, whose delicate structure might readily cause it to be overlooked. E.)
A. June.

SUBULA'RIA.* *Pouch* entire, transversely compressed: *Valves* tumid: *Style* shorter than the pouch: (*Seeds* numerous. E.)

S. AQUAT'ICA.

Dicks. H. S.—(*Hook. Fl. Lond.* 135—*E. Bot.* 732. E.)—*Fl. Dan.* 35—*H. Ox.* viii. 10. 29—*Pet.* 48. 8—*Pluk.* 188. 5.

Flourishes and blossoms under water. Linn. *Leaves* green, semi-cylindrical, full of pith. *Blossom* white. Ray. (*Flowers* small, on fruit-stalks. *Petals* incurved, by which the tender parts of the flower are protected from injury under water. *Seeds* small, egg-shaped, yellow, compressed. *Leaves* all radical. *Plant* about one inch high. According to Mr. R. Brown scarcely distinct from *Draba.* E.)

WATER AWLWORT. (IRISH RUSH CRESS. Welsh: *Myndwydlys dyfrdrig.* E.) Grows under water on a gravelly bottom in Lough Neagh, Ireland, on the side next Kilmore. Ray. (Lough Carban, a little north-west of the Gap of Barnesmore, Donegal. E. Murphy, Esq. E.) Loch Tay and Loch Carran, Scotland. Mr. Stuart. In lakes on the mountains near Llanberris. Hudson. Llyn y Cwn Snowdon. Pennant. Ffynnon Frech near Snowdon. Llyn Aled, Denbighshire. Mr. Griffith. Llyn Llywenan, Bodedern, Anglesey. Rev. Hugh Davies. (In the Loch of Clunie, Perthshire, generally in about four feet water. Mr. Brown. E.)
A. June—July.

DRA'BA.† *Pouch* entire, elliptic-oblong, compressed: *Valves* flat, parallel to the partition: *Style* none: (*Seeds* numerous. E.)

(D. AIZOI'DES. Stalks solitary, naked: leaves lanceolate, rigid, keeled, fringed: petals notched, twice as long as the calyx.

E. Bot. 1271—*Jacq. Austr.* 2. 192—*Ger. Em.* 514.

Leaves all radical, forming dense round imbricated tufts, shining, strap-spear-shaped, rigid, fringed with white hairs. *Stalks* terminal, simple, stiff, about an inch high. *Flowers* corymbose, bright yellow. *Calyx-leaves* elliptical, concave. *Petals* twice as long as the calyx, inversely egg-shaped, obtuse, with a slight notch. *Anthers* yellow. *Pouch* elliptical, flat, acute, crowned with an elongated style. Sm.

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* (From *subula*, an awl; as having awl-shaped leaves. E.)

† (From δραβη, acrid; the leaves of some species being pungently so. E.)

YELLOW ALPINE WHITLOW-GRASS. Discovered in the year 1795 by John Lucas, Esq. of Stout Hill, near Wormshead, sixteen miles west of Swansea. Abundant on walls and rocks about Pennard Castle, near Swansea. Dr. W. Turton. P. March—April. E.)

D. VER'NA. Stalks naked: leaves spear-shaped, hairy, sparingly serrated: petals divided.

Fl. Dan. 983—*Curt.*—(*E. Bot.* 586. E.)—*Thal* 7. *E.*—*Walc.*—*Dod.* 112. 2—*Lob. Obs.* 249. 2, *and Ic.* i. 469. 1—*Ger. Em.* 624. 1—*Park.* 556. 3—*Ger.* 499. 1—*Pet.* 48. 6 *and* 7—*J. B.* ii. 937. 2—*Seguier,* i. 4. 3. *at p.* 328—*Kniph.* 1.

Flowers hanging down at night. Linn. *Stalks* (scarcely a span high, E.) smooth after flowering, hairy when young. *Leaves* (all radical, forming a star on the ground, E.) sometimes entire. *Flowers* white, when in blossom in broad-topped spikes, about fifteen in each. It is difficult to find the full compliment of stamens when the flower is fully expanded, as they drop when the germen begins to enlarge.

COMMON WHITLOW-GRASS or CRESS. NAILWORT. (Welsh: *Llys y bystwn cyffredin.* E.) Walls, dry places, and pastures. A. March—April.*

(**D. HIRTA.** Stem seldom entirely naked: pouch spear-shaped: leaves slightly toothed, fringed with (mostly, E.) simple hairs.

E. Bot. 1338—*Fl. Dan.* 143.

Leaves almost all radical, spear-shaped, bluntly toothed, or waved at the edge, fringed, sometimes hairy underneath. *Stem* from one to three or four inches high, upright, simple, cylindrical, slightly hairy, frequently bearing one leaf towards the bottom. *Flowers* small, white. *Calyx* expanding, hairy. *Petals* scarcely notched.

D. stellata of Jacquin, to which this plant was referred in the fourth edition of our work, differs in many respects. On re-examining our specimens, we find that Mr. Brown originally named those gathered and communicated by himself "*D. hirta* of Linn." E.)

HAIRY ALPINE WHITLOW-GRASS. (*D. hirta.* Linn. Willd. Sm. *D. stellata.* Dicks. With. Hull. not of Jacq. *D. rupestris.* Br. De Cand. Hook. fid. Sm. E.) *D. pyrenaica.* Fl. Dan. (not of Linn. Sm. E.) Found by Mr. Dickson on rocks in the Highlands of Scotland. On Ben Lawers at great heights, and on the very summit. Mr. Brown. (On Ben Lomond. Mr. Winch. Limestone mountains of Leitrim and Sligo, plentiful. Mr. Murphy. E.) P. May—June. E.)

D. MURA'LIS. Stem branched: leaves egg-heart-shaped, sessile,

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* (Whether this be the παρωνυχία of the ancients, celebrated for curing the infirmity from which it derives its English name, must remain doubtful. It is about the earliest of our flowering plants, and though insignificant in itself, as an humble harbinger of the "formosissimus annus," it is not devoid of attraction by its enlivening little blossoms,

While yet the trembling year is unconfirm'd." E.)

It is good as a salad. Goats, sheep, and horses eat it; cows are not fond of it; swine refuse it.

toothed, hairy: pouch elliptical, blunt, flat, shorter than the partial stalks.

(*Hook. Fl. Lond.* 64—*E. Bot.* 912. E.)—*Col. Ecphr.* 272—*Barr.* 816—*Bauh. pr.* 50—*Park.* 843. 13—*H. Ox.* iii. 20. 5—*J. B.* ii. 939. 1—*Pet.* 48. 5.

Root-leaves entire at the base, toothed upwards. *Pouches* exactly elliptical, ending in a short blunt knob which is the summit. Woodw. (*Stem* and *leaves* hairy. *Stem-leaves* rather heart-shaped. *Petals* very slightly notched at the end. *Flowers* white, small, numerous, forming a long flowering bunch. *Stem* a span to a foot high, scabrous. The *calyx* has been represented hairy; but Hooker and Lamarck determine it to be smooth. E.)

SPEEDWELL-LEAVED WHITLOW-GRASS. Fissures of rocks, mountainous and stony pastures, especially in calcareous soil, in Derbyshire, Yorkshire, and Westmoreland. Arnbar Scar, near Arncliff, Littendale and Malham Cove. Curtis. Near to a cotton manufactory a little below Malham Cove. Mr. Caley. (Wardon Hills, near Barton, Bedfordshire. Rev. Dr. Abbot. At Old Malton, on walls, Rev. Archdeacon Pierson. On dry banks at Emborough, Somersetshire. Mr. Sole. E.)
A. April—May.

D. INCA'NA. Stem-leaves numerous, hoary, with starry pubescence: pouch oblong, oblique, nearly sessile.

(*E. Bot.* 388. E.)—*Fl. Dan.* 130—*Pet.* 48. 3 *and* 4—*Pluk.* 42. 1.

Radical-leaves very numerous, disposed in a rose-like form, spear-shaped, cottony and somewhat hairy, entire, pointed; *stem-leaves* often upwards of thirty, sessile, with a few teeth, similar to the root-leaves, but shorter, the uppermost egg-shaped, on the lower part of the stem more crowded. *Stem* a hand's breadth long, straight, hoary, cloathed with leaves. *Flowers* in a small terminal corymbus, which, when the fruit is ripe, becomes a *bunch*. *Petals* white, slightly notched. *Pouches* upright, egg-oblong, inclining contrary to the sun, compressed, naked. *Fruit-stalks* hoary, three times shorter than the pouches, stiff, approaching to the stem. Linn. *Stems* six to nine inches, slightly cottony, simple, crooked. *Leaves* oval-spear-shaped, a little hairy, the lower slightly, the upper deeply toothed. *Fruit-stalks* nearly as long as the pouches. *Pouches* spear-shaped, smooth, twisted, terminated by the blunt summit. Woodw.

TWISTED-PODDED WHITLOW-GRASS. Fissures of limestone rocks, and moist mountainous meadows, Westmoreland, and Carnarvonshire. About Settle, (and various parts of Yorkshire. E.) Rock near the summit of Ingleborough, on the west side. Mr. Woodward. Side of Roseberry Coppin, Yorkshire. Mr. Robson. (Cronkley Fell. Rev. J. Harriman. On walls in Teesdale, Durham. Mr. Brunton. Bot. Guide. At Durness, Sutherland; and on Ben Lawers. Mr. Anderson. E.)
B. May—July.

LEPID'IUM.[*] *Pouch* notched at the end, compressed: *Valves* sharply keeled: one *seed* in each cell.

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[*] (From λεπις, a scale; as an antiscorbutic formerly supposed to cleanse the skin even from leprosy. E.)

(1) Four stamens longer.

L. PETRÆ'UM. Leaves winged, entire: *petals notched, smaller than the calyx.*

(*Hook. Fl. Lond.* E.)—*E. Bot.* 111—*Jacq. Austr.* 131—*Col. Ecphr.* 273—*Crantz.* i. 2. 4. 5.

One of our smallest and most delicate plants, (only two or three inches high, branched. E.) *Leaves* dark green; *leafits* elliptical, tapering each way, on leaf-stalks, very entire, thickish, from six to twelve pairs, with an odd one. *Flowers* in a close corymb, which, as the fruit ripens, lengthens out into a bunch. *Petals* spatula-shaped, white, as long as, and narrower than the calyx; generally entire, but sometimes slightly notched. *Pouches* broad egg-shaped, blunt, convex underneath, flat above; *valves* keeled. Jacq. (Mr. Brown has suggested that the entire apex of the pouch, (not so when mature, Sm.) and each cell containing two seeds, (or rather, "more than one," the number not being limited precisely to two,) in this species, with accumbent cotyledons, are sufficient to constitute a new genus, designated *Hutchinsia*, after a lady whose memory will long be cherished by Botanists, and whose name has also been conferred still more appropriately, by Agardh, on a genus of marine plants; *Conferva; Polysiphonia* of some authors. E.)

ROCK DITTANDER or PEPPER-WORT. (*L. petræum.* Linn. Jacq. Willd. Fl. Brit. Huds. Purt. *Hutchinsia petræa.* Br. Sm. Hook.) Rocks, walls, and stony places. St. Vincent's Rock, near Goram's Chair, and on walls about Bristol. Sherard. Uphill, Somersetshire; Dovedale. Mr. Caley. (On a limestone wall near Pembroke. J. Adams, Esq. Fl. Brit. Rocks near the Waterfall at Burton, in Bishopdale, Wensley Dale, Yorkshire. Mr. Brunton. A weed on the walks at Stockpole, Pembrokeshire. Mr. Milne. Walls of Pennard Castle, Glamorganshire. Mr. Dillwyn, in Bot. Guide. E.) B. March—April.

L. LATIFO'LIUM. Leaves egg-spear-shaped, entire, serrated.

Fl. Dan. 557—*E. Bot.* 182—*Kniph.* 3—*Fuchs.* 484—*J. B.* ii. 940. 1—*Trag.* 83—*Matth.* 609—*Dod.* 716. 1—*Lob. Obs.* 172. 4, *and Ic.* i. 318. 2—*Ger. Em.* 241. 2—*Park.* 855. 1—*H. Ox.* iii. 21, *row* 2. 1—*Blackw.* 448—*Lonic.* i. 161—*Ger.* 187. 2—*Pet.* 48. 10—*J. B.* ii. 940. 2.

Stem branched, flexuose, (leafy, three feet high, cylindrical, smooth. E.) *Leaves* smooth, entire, sometimes a little serrated about the middle part; lower ones five or six inches long, unequal at the base. *Calyx* leaves purplish, white at the edge. *Pouch* hairy. *Flowers* numerous, in panicles, white, (small. *Petals* longer than the calyx, entire. E.)

BROAD-LEAVED PEPPER-WORT or DITTANDER. POOR-MAN'S PEPPER. (Welsh: *Pybyrllys llydanddail. Berwr gwyllt.* E.) Meadows and pastures. The Hythe, at Colchester; Heybridge, near Malden, and marshes near Grays, in Essex; Sheringham Cliffs, Norfolk; and between Beningborough and Mitton in the North Riding of Yorkshire. Ray. Near Seaton, plentifully. Mr. Robson. Near St. Asaph. Lord Lewisham (On the Sea walls at Bradwell, near the Sea, Essex. Mr. Woodward. Near Durham Abbey, by the Wear. Mr. Robson. Winch Guide. In hedges at Aberfraw, and Llanrhuddlad, Anglesey. Welsh Bot. On the rock of Bothwell Castle. Dr. Walker. Hook. Scot. E.) ♃. June—July.*

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* This is one of the acrid antiscorbutics. The roots were formerly used as Horse-radish. An infusion of it vomits.

(2) *Stamens either two or four.*

L. RUDERA'LE. **Radical leaves pinnatifid: branch-leaves strap-shaped, entire: petals sometimes wanting.**

Trag. 83. 2—*Fl. Dan.* 184—*E. Bot.* 1595—*Matth.* 608—*Dod.* 713. 1—*Lob. Ic.* i. 214. 1—*Ger. Em.* 262. 4—*Park.* 829—*H. Ox.* iii. 19, *row* 2. *f.* 3—*Pet.* 50. 1—*Fuchs.* 307—*J. B.* ii. 914.

Stem usually crooked, woody, stiff, (upright, a foot high. E.) *Leaves* fleshy, smooth. *Fruit-stalks* slender. *Pouches* numerous, small, much compressed. Woodw. *Flowers* minute, whitish, in dense roundish clusters gradually lengthening out. *Stamens* two or four; (Smith states that he never found this plant with petals, or with more than two stamens. E.) The plant smells like a fox.

NARROW-LEAVED DITTANDER or PEPPER-WORT. On rubbish, and on the sea coast. Malden, Essex; Yarmouth, Lynn, and Cley, Norfolk; Truro, Cornwall. Ray. Salt marshes near Yarmouth, Norfolk, plentifully. Mr. Woodward. On the side of the Severn, above Worcester. Stokes. Near King's Weston, below Bristol. (On St. Anthony's Ballast Hills, Northumberland. Mr. Winch. E.) A. June—Aug.

L. CAMPES'TRE. **(Pouch scaly, roundish, notched, bordered at the top: style very short: stem-leaves arrow-shaped, toothed. E.)**

Curt.—(*E. Bot.* 1385. E.)—*Ger.* 204. 2—*Pet.* 50. 7—*Fuchs.* 306—*J. B.* ii. 921. 1—*Trag.* 87.

Stems many from the same root, thickly clothed with leaves. In some situations it is green and slightly hairy, in others very downy and white, and is then *T. hirtum* of Hudson. Woodw. *Stem* undivided except at the top, where it separates into seven or eight branches, above the branches naked. *Root-leaves* spear-egg-shaped, on long flat leaf-stalks, sometimes wing-cleft at the base. *Fruit-stalks* horizontal. *Pouches* nearly heart-shaped, convex on the lower, and concave on the upper surface. *Blossom* white. *Calyx* spotted with brown. (Smith remarks that the *pouch* may be found either dotted, quite smooth, or slightly hairy, when it becomes *T. hirtum* of Hudson, but not of Linnæus. The *seeds* being solitary in each cell, and the *cotyledons* incumbent, Mr. Brown has removed this species from Thlaspi. E.)

Var. 2. Leaves smooth, broader, scarcely serrated; those at the root not indented.

Blackw. 407—*Dod.* 713. 3—*Lob. Obs.* 108. 2, *and Ic.* i. 213. 1—*Ger. Em.* 262. 2—*Park.* 836. 2—*Pet.* 50. 8—*H. Ox.* iii. 17. 14—*Matth.* 566.

Thlaspi Vaccariæ folio glabrum. R. Syn. 305. Between Beccles and Bungay, Suffolk. Ray. (On Willington Ballast Hills, Durham. Mr. Winch. On the banks of the New River, near the upper Iron Bridge, Bristol. Mr. S. Rootsey. E.)

MITHRIDATE PEPPER-WORT. COW CRESS. (Welsh: *Codywasg y maes. L. campestre.* Br. in Ait. De Cand. Sm. Hook. *Thlaspi campestre.* Linn. Lightf. Huds. With. Curt. E.) Corn-fields and sunny situations in a clayey and sandy soil. A. June—July.

(L. HIR'TUM. **Pouch often hairy, not scaly, bordered at the summit: stem-leaves arrow-shaped, hoary: style elongated.**

E. Bot. 1803—*Pet.* 50. 10.

Differs from *L. campestre* in having a woody *root*, more oblong and less tumid *pouches*, whose sides are often very hairy, and when destitute of hairs are but obscurely dotted, never so scaly as in that species. *Petals* much larger, and more conspicuous; but the most decisive mark, observes Mr. Leathes, is the elongated *style*, projecting far beyond the lobes of the pouch, whereas the short style of *L. campestre* is but just equal to those lobes. E. Bot. This species, for the reasons which determine the preceding, must be referred to the same genus.

HAIRY MITHRIDATE PEPPER-WORT. HOARY CRESS. *L hirtum*. De Cand. Galp. Sm. Hook. Grev. *Thlaspi hirtum*. Linn. Willd. Fl. Brit. *T. campestre*. Var. 3. With. Ed. 5. It has been found in Perthshire, near the seat of the Earl of Kinnoul, by Mr. Miller. At Browston, Suffolk. Rev. G. R. Leathes. By the river Esk, between Brichen and Montrose. Mr. G. Don. The Editor, by the kindness of Mr. Winch, has been favoured with specimens from the neighbourhood of Newcastle.

P. June. E.)

THLAS'PI.[*] *Pouch* inversely heart-shaped, notched at the end; valves keeled or bordered; cells many-seeded.

T. ARVEN'SE. Pouch round and flat, (smooth: E.) leaves oblong, toothed, smooth.

(*E. Bot.* 1659. E.)—*Ludw.* 173—*Fl. Dan.* 793—*Blackw.* 68—*Matth.* 567—*Ger.* 204. 1—*J. B.* ii. 923—*Sheldr.* 105—*Dod.* 712—*Lob. Obs.* 108. 1, *and Ic.* 1. 212. 2—*Ger. Em.* 262. 1—*Park.* 836. 1—*H. Ox.* iii. 17. 12—*Pet.* 50. 9.

Leaves arrow-shaped at the base, embracing the stem. *Pouches* deeply notched. Woodw. half an inch over, broadly winged, (forming long clusters. E.) *Stem* upright, about one foot high, with seven or eight membranous edges. *Seeds* spear-shaped, but compressed, hanging or pointing downwards. *Blossom* white, very small.

(SMOOTH MITHRIDATE MUSTARD, E.) or PENNY CRESS, (from a fancied resemblance to a silver penny. E.) Corn-fields, especially in a muddy soil; (not common. In waste ground on the north-east side of Norwich. Mr. Rose. Near the sea at the south end of Lowestoft. Sir J. E. Smith. Queensferry. Mr. D. Steuart. Grev. Edin. Magilligan, Derry. Mr. Murphy. E.) A. June—July.[†]

T. PERFOLIA'TUM. Pouch inversely heart-shaped: stem-leaves heart-shaped, smooth, somewhat toothed, (embracing the branched stem: style very short. E.)

Dicks. H. S.—(*Hook. Fl. Lond.* E.)—*Jacq. Austr.* 337—(*E. Bot.* 2354. E.)—*Cal. Ecphr.* 276. 2—*Tab. Hist.* 851—*Pet.* 50. 12.

Blossom white, hardly larger than the calyx. *Stamens* longer than the flower; white. *Anthers* yellowish. *Pouch* like that of the common Shepherd's-purse. Linn. *Stem* about a foot high, upright, simple, but in gardens and rich soil branched. *Leaves* glaucous green, clasping the stem: lowermost egg-shaped, on leaf-stalks.

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[*] (From θλαω, to strike or squeeze flat, as the seed-vessels of these plants appear. E.)

[†] The whole plant has something of a garlic flavour. The seeds have the acrimony of mustard. When cows eat it their milk acquires a disagreeable taste. Cows, goats, and swine eat it.

Perfoliate Shepherd's-purse. T. alpestre. Huds. In limestone pastures, rare. Abundant in the stone-pits between Witney and Burford, and on Burford downs, Oxfordshire. Bobart. Sir J. E. Smith suspects other British stations to be erroneous, the northern ones especially belonging to T. alpestre. E.) A. April—May.

T. ALPES'TRE. (Pouch obovate: stem-leaves arrow-shaped: stems simple: style extended: root long, fibrous, but not creeping. E.)

E. Bot. 81—*Clus.* ii. 131. 3—*Tabern.* 854. 19—*Ger. Em.* 268. 2—*Ger.* 210. 7—*Park.* 837. 8—*Thlaspi perfoliatum minus. Ray Syn.* 305. 6.

Root-leaves forming a tuft. *Stem* single, central, flowering early; but should the plant have been eaten down by cattle, other lateral stems sometimes afterwards shoot up, flowering later. *Petals* white, about the length of the calyx. *Anthers* purplish. *Seeds* three or four in each cell. E. Bot.

Smith observes, that Hudson's *T. montanum*, (inserted in the earlier Editions of this work, on the authority of Ray and Curtis, as growing near Settle, and in many mountainous pastures between that place and Malham, E.) is certainly the *T. alpestre* of Linn. and that his *T. alpestre* is *T. perfoliatum* of Linn.; but it should be remarked, that Ray, in his Synopsis, p. 365, No. 4 and 6, also records two species, referring to the same figures which Linnæus in the Sp. Pl. has quoted to *T. montanum* and *T. alpestre*. He likewise particularly notices the creeping root of *T. montanum*, a circumstance inapplicable to *T. alpestre*.

(ALPINE SHEPHERD'S PURSE. *T. alpestre.* Linn. *T. montanum.* Huds. With. Curt. *T. foliis Globulariæ.* Ray: according to Smith. Pastures above the ebbing and flowing well, two miles from Giggleswick, Yorkshire, in stony ground among the grass. Merret. On moist limestone pastures in Westmoreland and Cumberland. Nicholson. Limestone rocks at Matlock. Smith. (About Pont Nedd Vachn and Aberpergam, Glamorganshire; Mr. Dillwyn: also near Wince Bridge, Durham. Rev. J. Harriman. Bot. Guide. Near Nentwater, on the Moors, rare. Mr. Winch. By the side of a dingle, called Nant Bwlch yr Hiarn, about a mile from Llanrwst bridge, and not more than twenty yards from the turnpike road leading to Conway. Mr. Griffith. E.) B. July.

T. BURSA-PASTO'RIS. (Plant hairy: E.) pouches compressed, somewhat triangular, inversely heart-shaped without a border: radical leaves pinnatifid.

Ludw. 186—*Curt.*—(*E. Bot.* 1485. E.)—*Blackw.* 5—*Walc.* 5—*Dod.* 103. 1—*Lob. Obs.* 110. 1, *and Ic.* i. 221. 1—*Ger. Em.* 276. 1—*H. Ox.* iii. 20. *row* 1. 2—*Pet.* 49. 4, 5, 6 *and* 7—*Ger.* 214. 1—*Fuchs.* 611—*Trag.* 215—*J. B.* ii. 936—*Lonic.* i. 139. 1—*Park.* 866. 1—*Matth.* 569.

Leaves fringed with fine hairs. *Stem-leaves*, the upper entire, strap-spear-shaped, embracing the stem. *Bunches* long, flatted at the top, terminal. *Calyx* hairy. *Petals* entire, white. *Summit* circular, fringed, concave. *Anthers* a little woolly. *Germen* egg-shaped, compressed, with a channel down the middle.

This plant affords a strong instance of the influence of soil and situation, for it grows almost every where, and sometimes is not more than two inches high when it flowers and perfects its seeds; whilst in other situations it attains the height of two or three feet. Linn. The plants of this *genus begin to flower long before they have attained their full size, the flowers at first forming a corymbus, but this after a while shoots out and assumes the form of a long spike-like bunch. The stem also, in its earlier stages simple, in time becomes branched, the first branches issuing from its* upper part. (It varies in a barren chalky soil, with all the leaves, entire, and the stem simple, as represented in the last figure of Petiver above cited. E.)

COMMON SHEPHERD'S-PURSE. (Irish: *Gassan Cailleagh.* Welsh: *Llys tryfal; Pwrs y bugail.* Gaelic: *Sporran-buachaill.* E.) Among rubbish, road sides, walls, corn-fields, and gravel walks.
A. March—Sept.*

COCHLEA'RIA.† *Pouch* notched, but slightly turgid, rugged, bivalve, many-seeded: valves tumid.

C. OFFICINA'LIS. Root-leaves heart-circular: stem-leaves oblong, a little indented: pouch globular.

(*Hook. Fl. Lond.* 148—*E. Bot.* 551. E.)—*Kniph.* 3—*Ludw.* 133—*Fl. Dan.* 135—*Blackw.* 227—*Woodv.* 29—*Pet.* 49. 1—*J. B.* ii. 942—*Dod.* 594. 1—*Lob. Obs.* 156. 4, *and Ic.* i. 293. 2—*Ger. Em.* 401. 1—*Park.* 283. 2—*H. Ox.* iii. 20. 1—*Ger.* 324. 1.

Stem angular, (from two or three inches to a foot high. E.) *Root-leaves* on long leaf-stalks, heart-kidney-shaped, fleshy, (commonly half an inch to an inch over, but we have a specimen from Cornwall measuring full two inches. E.) *Stem-leaves* sessile, sometimes halberd-shaped, the lower occasionally on short broad leaf-stalks. *Petals* fleshy, clear white. *Claws* greenish. *Pouch* either not notched at the end, or scarcely sensibly so, sometimes pointed by the style, smooth. *Partition* double. *Seeds* rough. (Smith remarks that this species may be distinguished from either *C. anglica* or *C. danica*, by its *pouch*, which is globular, very slightly rugose, and but indistinctly veined.

Var. 2. Scarcely differs from the preceding, except in its diminutive size, and little elongated style. Dr. Withering, after much observation, concluded it to be only a mountainous variety of *C. officinalis.* It is *C. Groenlandica* of With Ed. 4. but not of Linnæus, as clearly ascertained by Smith.

Common on the mountains about Llanberris, Carnarvonshire. Hudson. On wet ground near Whey Sike House, Teesdale: and near Coal Cleugh, Northumberland. Winch Guide. E.)

COMMON SCURVY-GRASS. (Irish: *Billar traihe.* Welsh: *Môrlwyau meddygawl.* Gaelic: *Biolaire.* E.) Sea shores, common, also on inland mountains in Derbyshire, Yorkshire, Scotland, and Wales. (Among the cliffs of Cheddar, Somersetshire. E.) A. April—May.‡

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* (The young radical leaves are brought to market, in Philadelphia, and sold for greens in the spring of the year. Barton. Small birds feed on the seeds. This plant sometimes exhibits a very diseased appearance, when infested with oval white blotches of the small parasitic fungus *Uredo Thlaspi*; With. vol. 4. p 373: also represented as *U. candida*, in Grev. Scot. Crypt. 251, and said to affect others of the *Cruciferæ*, itself forming a nidus for a yet more minute parasite, *Botrytis parasitica*, Pers. and thus, by microscopic art, may the wonders of creation be brought to light, in a ratio almost *ad infinitum.* E.)

† (From *cochleare*, a spoon; its root leaves assuming the form of a spoon or shell. E.)

‡ Notwithstanding this is a native of the sea coast, it is cultivated in gardens without any sensible alteration of its properties. It possesses a considerable degree of acrimony,

The following metamorphosis of this Proteus-like plant is more extraordinary than any other which has occurred to my observation.

Root woody, sending out fibres. *Stem* none. *Leaf-stalks* lying close on the ground, springing from the crown of the root, very slender, about one or one and a half inch long. *Leaves* smooth, entire, varying from circular to heart-shaped, sometimes with a single indentation on each side, about the eighth of an inch in diameter. *Fruit-stalks* from the crown of the root, very slender, leafless, one to one and a half inch long, supporting a single flower. *Blossom* petals reflexed, very much larger than the calyx, of a bright rich lilac-colour, streaked with deeper purple lines. *Pouch* circular heart-shaped, two-celled, with four rough seeds in each, placed alternately, on short pedicles.

This elegant little plant grows in a rich soil in various places about Lisbon, but more particularly on the shores of the Tagus; flowering in January and February, and I never saw it there assume any other appearance, so that concluding it to be a *Cochlearia,* I fully concurred in opinion with my good friend the Abbé Corrêa da Sêrra that it was a species unknown to the Linnæan School. Some seeds sown in my garden at Edgbaston in the autumn of 1793, produced plants which flowered in March 1794. These agreed in every respect with the Portugal plants. In April the colour of the petals was more dilute, the whole plant larger, and much resembling *C. Danica,* as represented in the Fl. Dan. t. 100. In the month of May the petals became entirely white, and much smaller than those which had flowered in March: the flowers formed a corymbus, the stems grew to a foot or more in height, bearing angular leaves, and in every respect corresponding with the ordinary *C. officinalis.*

(The real *C. Groenlandica* of Linnæus, remarkable for larger and more beautiful flowers, is said to have been found by Mr. G. Don on the mountains of Clova in Augusshire, and Loch-ne-gare; but it appears doubtful whether even this may not prove a variety of *C. officinalis.* Sir J. E. Smith does "not venture to assert that it is a distinct species." Prof. Hooker states, "I can see no difference whatever in *C. Groenlandica;* for the sinuated and toothed, or entire leaves, are extremely variable marks:" and Mr. Robson, (in Hull,) observes, "*C. Groenlandica* by cultivation in a rich soil becomes *C. officinalis;* but if kept confined in a pot, retains its diminutive size." Vid. Linn. Tr. vol. x. p. 344. E. Bot. 2403. and Fl. Lond. 147. E.)

C. DAN'ICA. All the leaves deltoid, stalked: (pouch reticulated with veins, E.)

(*E. Bot.* 696. E.)—*Fl. Dan.* 100—*Lob. Obs.* 338. 1, and *Ic.* i. 615. 2—*Ger. Em.* 271—*Park.* 848. 1—*J. B.* ii. 939. 2—*H. Ox.* iii. 20. 3—*Pet.* 49. 3.

Stems (three or four inches long, E.) not branched as in *C. officinalis.* *Suckers* trailing. All the *leaves* halberd-shaped, or egg-shaped, with an angle on each side of the base. *Leaf-stalks* not toothed at the base, or embracing the stem. *Capsules* egg-shaped. Linn. *Blossom* small, white.

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which seems to reside in a very subtile essential oil. Its effects as an antiscorbutic are universally known. (in corroboration of the testimony of physicians, may be adduced that of the circumnavigators Maartens, Egede, Anson, and others of our own country. E.) It is a powerful remedy in the pituitous asthma, and in what Sydenham calls the scorbutic rheumatism. A distilled water, and a conserve, are prepared from the leaves, and its juice is prescribed along with that of oranges by the name of anti-scorbutic juices. It may be eaten as a salad. Cows eat it. Horses, goats, and sheep refuse it.

DANISH OR IVY-LEAVED SCURVY-GRASS. (Welsh: *Môrlwyau Daniaidd.* E.) *Thlaspi hederaceum.* Ger. Em. 271. Park. 848. Sea shores. Isle of Walney, Lancashire, and near Llandrick church, Anglesey. Ray. Wells, Norfolk. Mr. Crowe. (Castle walls, Shrewsbury. Mr. Arthur Aikin. About St. Anne's Light-house and other places on the east of Pembrokeshire. Abundant on the rocks about the Mumbles Light House, and in similar situations on the Glamorganshire coast. Mr. Dillwyn. Blackpool, Lancashire. Rev. W. Wood. Willington Quay, Durham. Mr. Winch. Purbeck Cliffs. Pulteney. Cramond and Burntisland in the Firth of Forth. Maughan. Grev. Edin. E.) A. May—June.

C. AN'GLICA. (Root-leaves heart-egg-shaped, entire: those on the stem spear-shaped, toothed: fruit elliptical, strongly reticulated with veins. E.)

(*E. Bot.* 552. E.)—*Fl. Dan.* 329—*Blackw.* 218—*Dod.* 594. 2—*Lob. Obs.* 157. 1, *and Ic.* i. 294. 1—*Ger. Em.* 401. 2—*Park.* 285. 1—*H. Ox.* iii. 20. *row* 3. 2—*Ger.* 324. 2.

Root-leaves generally entire; *stem-leaves* indented, but sometimes all entire, or all indented. *Pouches* roundish, fleshy, much larger than those of *C. officinalis*, and terminated by a longer style about two-thirds of a line in length. Woodw. (This species likewise varies in the size and shape of its parts, but is always smooth and rather fleshy, scarcely half the size of *C. officinalis*. *Pouches* all over strongly marked with a net work of prominent veins, scarcely at all to be perceived in those of the more common kind. E. Bot. E.)

SPOONWORT. ENGLISH SCURVY-GRASS. (Welsh: *Môrlwyau Brutanaidd.* E.) Sea shores, in muddy soil. Kent and Essex salt marshes, where the water overflows them every tide. Miller. At Yarmouth. Mr. Crowe, and on the coast abundantly. Mr. Woodward. Isle of Wight; Dr. Stokes. River banks near the Hot Wells, Bristol. Rev. G. Swayne. (On the shores of Tyne, at the mouth of Coble Dean, near North Shields. Winch Guide. In Anglesey. Welsh Bot. E.) A. May.*

C. ARMORA'CIA. (Root-leaves on long stalks, spear-shaped, scolloped: stem-leaves sessile, cut or entire: root long and fleshy. E.)

(*E. Bot.* 2323. E.)—*Woodv.* 150—*Blackw.* 415—*Fuchs.* 660—*J. B.* ii. 852—*Lonic.* i. 160. 1—*Trag.* 734—*Dod.* 678. 1—*Lob. Obs.* 173, *and Ic.* i. 320. 1—*Ger. Em.* 241. 1—*Park.* 860—*Pet.* 49. 11—*Ger.* 187. 1—*Matth.* 442—*H. Ox.* iii. 7, *row* 3. 2.

(*Root* very long, cylindrical, acrid. *Stem* two feet high, upright, leafy. *Root-leaves* very large, oblong, crenate, sometimes winged, veined; *stem-leaves* spear-shaped, either cut or very entire. *Blossom* white, numerous. *Pouch* elliptical, with a very short style, and large stigma. Seldom perfects seeds. Fl. Brit. *Radical leaves* sometimes two feet long, coarse, irregularly pinnatifid and jagged, as Pet. 49. 12. or broad, nearly entire, except a finely indented edge. E.)

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* (This species is supposed to possess, though perhaps in an inferior degree, the same medicinal virtues as *C. officinalis*. They are considered to promote the fluid secretions; and to open glandular obstructions. They are much employed in the scorbutic disorders prevalent in northern countries. Some authors have conjectured this, (or our other officinal species), to be the real *Herba Britannica* of Pliny, from the use of which the army of Cæsar derived great benefit in their sufferings from scurvy whilst in Germany. Olaus Magnus also confirms its efficacy. E.)

HORSE-RADISH. (Welsh: *Rhuddygl mawrth.* E.) Sides of ditches; banks of rivers. About Alnwick, Northumberland; banks of Skipton-beck, and elsewhere in Bolland, in Craven. Ray. (In a ditch between Carreglwyd and Llanrhwydrus, Anglesey. Welsh Bot. On the river Arrow, near Oversley bridge. Purton. In great plenty above Hutton Bay, parish of Orphir, Orkney. Month. Mag. v. 28. p. 462. Duddingston Loch. Mr. Arnott. Grev. Edin. E.) P. May.*

(CORO'NOPUS.† *Pouch* nearly entire, kidney-shaped, compressed, wrinkled: cells without valves, single-seeded. E.)

C. **RUEL'LII.** (Pouch entire, crested with little sharp points: style extended: corymb with few flowers. E.)

Fl. Dan. 202—(*E. Bot.* 1660. E.)—*Blackw.* 120—*Ger.* 340. 2—*Dod.* 110 —*Lob. Obs.* 240. 1, *and Ic.* i. 438. 1—*Ger. Em.* 427. 2—*Pet.* 50. 6—*H. Ox.* iii. 19. 9—*Tourn.* 102—*J. B.* ii. 919. 2—*Matth.* 851—*Park.* 502. 5—*Park.* 502. 2.

Stem and *root-leaves* prostrate, longer than the branches; *leafits* cut along the fore edge, very entire along the back edge, the terminal one strap-shaped, very entire. *Pouch* kidney-heart-shaped, depressed on the sides, with furrows and sharp ridges running towards the edge, where they run out into sharpish points; one of the cells not unfrequently empty, in which case the fertile seed expands, filling up almost the whole of the seed-vessel. St. *Bunches* from the bosom of the leaves. *Blossom* white, small. (Whole *plant* nauseously acrid and fetid. Sm. E.)

(De Candolle has been followed by some few British Botanists in constituting a new genus after M. Senebier, for this plant, but as changes merely nominal tend only to produce confusion, especially the adoption of proper names in no degree characteristic, we venture to retain the former designation. E.)

SWINE'S CRESS. (Welsh: *Olbrain defadenawg; Berwr y môch.* E.) *C. Ruelli.* Gært. Br. Fl. Brit. Hook. Grev. *Cochlearia Coronopus.* Linn.

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* The root scraped (which has a quick pungent smell, and a penetrating, acrid taste, E.) is in common use at our tables as a condiment for fish, roast beef, &c. and it is used for many other culinary purposes. (It is thought to create appetite and assist digestion. An infusion, made into a syrup, is an approved remedy for hoarseness. An Essence of Horse-radish is sold in the shops for the cure of tooth-ach, and is often successful. The roots when dried lose much of their acrimony, becoming almost insipid, but they may be preserved, retaining their qualities, in sand and in a cool place, a considerable time. E.) An infusion of it in cold milk makes one of the safest and best cosmetics. In paralytic and dropsical cases it is an useful stimulant and diuretic. A strong infusion excites vomiting. A distilled water is prepared from it. Horses, cows, goats, sheep, and swine refuse it. *Papilio Brassicæ* feeds upon the several species. (A spoonful of Horse-radish put into a pan of milk will preserve the milk sweet several days, either in the open air or a cellar, while other milk will turn sour.—Mr. Salisbury, (on the authority of Dr. Taylor, Secretary to the Society of Arts), gives the salutary caution, that "this very grateful and wholesome root is not at all times to be eaten with impunity." When taken alone, on an empty stomach, as immediately before dinner, its effects have proved highly deleterious, and in one instance speedily fatal. Instructions for the cultivation of Horse-radish, by Mr. D. Judd, may be found in Tr. Hort. Soc. E.)

† (Obviously derived from κορωνη, a crow; and πȣς, a foot; illustrative of the shape of its leaves; though the name of *Crowfoot* be more appropriately attached to Ranunculus. E.)

Lightf. *With. Ed.* 4. *Willd. Oed.*, &c. *Senebiera Coronopus.* De Cand. Corn-fields; rubbish; road sides. A. June—Aug.

C. DID'YMA. (Pouch notched, didymous, wrinkled: style scarcely perceptible: corymb with many flowers. E.)

E. Bot. 248.

Stem a foot high. *Leaves* winged; *leafits* sessile, alternate, spear-shaped, toothed on the fore edge. *Bunches* from the bosom of the leaves, as long as the leaves. *Capsules* roundish, double, somewhat wrinkled. An intermediate plant between the *Cochleariæ* and *Lepidia*. Linn. *Stamens* two, or four. *Flowers* white, minute.

PROCUMBENT DITTANDER. (*C. didyma.* Br. Fl. Brit. E.) *Lepidium Anglicum.* Huds. (*L. didymum.* Linn. With. Ed. 4. E. Bot. Dicks. *Senebiera didyma.* Willd. Sm. *S. pinnatifida.* De Cand. E.) On rubbish about Exeter, Truro, and Penryn. Hudson. (At Dale, near Milford Haven. Mr. Adams. On the Ballast Hills of Tyne and Wear. Winch Guide. On a bank in a field near the village of Great Baddow, Essex. Mr. W. Christy; who favoured us with specimens gathered there on Christmas day, 1827. E.) A. June—July.

IBERIS.* *Bloss.* the two outer petals larger: *Pouch* one seed in each cell.

1. AMA'RA. Herbaceous: leaves spear-shaped, acute, somewhat toothed: flowers in spike-like bunches.

E. Bot. 52—*Kniph.* 9—*Riv. Tetr.* 109, *Thlaspid. fol. Nasturtii*—*J. B.* ii. 925. 1—*Ger.* 205. 6—*Ger. Em.* 263. 5, *right hand.*

Leaves strap-spear-shaped, generally with one or two teeth on each side. *Flowers* white. (Whole *plant* smooth, bitter. *Stems* spreading, branched, leafy. *Leaves* rather fleshy. *Pouch* sharply notched at the end. E.)

BITTER CANDY-TUFT. (Welsh: *Beryn Chwerw* In chalky fields; rare. E.) Corn-fields about Henley and other places in Oxfordshire. Hudson. Common about Wallingford, Berks. Smith. Road side between Cheadle and Oakmoor; on a common. Rev. J. Horatio Dickenson. (Above the beach between the Mount and Lleiniog, Anglesey. Welsh Bot. A. June—July.†

(TEESDA'LIA.‡ *Pouch* inversely heart-shaped, notched: two seeds in each cell: each with a scale near its base. E.)

(T. NUDICAU'LIS. Stem naked, simple: petals unequal. E.)

Dicks. H. S.—*Curt.*—(*E. Bot.* 327. E.)—*Dod.* 103. 2—*Lob. Ic.* i. 221. 2—*Ger. Em.* 276. 2—*Park.* 866. 3—*J. B.* ii. 937. 1—*Pet.* 50. 2—*Fl. Dan.* 323—*Ger.* 194. 3—*Ger. Em.* 251. 4—*Park.* 828. 7—*Magn. Bot.* 187—*H. Ox.* iii. 19. 5.

Stems numerous, with usually one sessile leaf below the middle. *Root-leaves* spreading on the ground in a circle, smooth, wing-cleft, terminal, lobe large. *Pouches* somewhat convex on one side, flat on the other, bordered with a projecting margin, and marked with a perpendicular line, which is the edge of the partition. Woodw. From two to four inches high. *Leaf-stalks* as long as the leaves. *Flowers* small, white, in a terminal spike-like bunch.

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* (Supposed from IBERIA, the ancient name of Spain, where it abounds. E.)

† (By some thought worthy of a place in the flower garden. The seeds are said to be acrid, bitter, and violently purgative. The general qualities of the plant antiscorbutic. E.)

‡ (In honour of Mr. Robert TEESDALE, gardener at Castle Howard.—Ob. 1804. E.)

Naked-stalked Teesdalia. Shepherd's Cress. (Welsh: *Beryn coesnoeth.* E.) Gravelly places and barren heaths. Near Hampton Court, Richmond, and Barnes Common. Ray. Putney Heath. Miller. Old stone pits by the side of Pensham Field, Worcestershire. Nash. About Norwich, frequent. Mr. Pitchford. Bungay. Mr. Woodward. Between Corby Castle and Carlisle. Dr. Stokes. Harmer Hill, near Salop. Mr. Aikin. (About Llansadwrn and Pentraeth, Anglesey. Welsh Bot. Between Dorking and Brockham. Mr. Winch. Near the coal pits on Bovey Heathfield, Devon. Rev. J. Pike Jones. Coleshill heath, Warwickshire. Purton. Sand rock near Milverton, Warwickshire. Perry. At the Ness, between Shrewsbury and Oswestry. Mr. W. Clayfield. Sandy fields near Tollcross, Glasgow. Hopkirk. E.) A. May—July.

SILIQUOSA.

DENTA'RIA.* (*Pod* lanceolate, opening elastically: valves rolling back: *Summit* notched: *Seeds* on flat, dilated stalks. E.)

D. bulbif'era. Lower-leaves winged, upper ones undivided.

E. Bot. 309—*Fl. Dan.* 361—*Clus.* ii. 121. 1—*Lob. Ic.* i. 687. 2—*Ger. Em.* 984. 1—*Park.* 620. 1—*Ger.* 833. 1.

(*Root* creeping, toothed, fleshy, white. *Stem* upright, a foot and a half high, undivided, leafy, naked at the bottom. *Corymbus* terminal, solitary. *Blossoms* large, pale purple. E.) Black scaly *bulbs* produced from the bosom of the leaves, (as in *Lilium bulbiferum*), by which falling on the ground and there vegetating, a succession is secured; the *seeds* rarely attaining perfection.

Bulbiferous Coral-wort or (Tooth-wort. *Cardamine bulbifera.* Br. Hook. E.) Woods and shady places, Highreede and Foxhole woods, near Mayfield, Sussex. Parkinson. Old Park Wood, near Harefield. Blackstone. Woods between Beconsfield and Wickham. Hudson. (On high rocks, at Tunbridge Wells. Rev. —— Bale. Near Dupplin. Mr. Shillinglaw. Hook. Scot. E.) P. April—May.

CARDAM'INE.† (*Pod* linear, two-edged, opening elastically: valves rolling back: *Summit* a knob, entire: *Seeds* on capillary stalks. E.)

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* (From *dens*, *dentis*, a tooth; because its root is denticulated; and hence the ancients would probably have inferred its antiodontalgic efficacy, though vainly. E.)

† (A diminutive of καρδαμας, the Greek name for Water-cress; probably compounded of καρδια, the heart; and δαμαω, to afflict: from its pungent acrimony. E.)

(1) *Leaves undivided.*

C. BELLIDIFO'LIA. Leaves egg-shaped, entire, (about one-third the length of the leaf-stalks. E.)

Fl. Dan. 20—*Jacq. Misc.* i. 17. 2—(*E. Bot.* 2355. E.)—*Fl. Lapp.* 9. 2.

(*Stem* two or three inches high, upright, undivided, smooth, with few leaves, and those nearly sessile. *Corymbus* terminal, of few flowers. *Petals* erect, twice the length of the purplish calyx, white. *Pod* strap-shaped, blunt, smooth, scarcely an inch long. E.)

DAISY-LEAVED LADIES'-SMOCK. Mr. Griffith informs me that the *Turritis hirsuta* now grows in the places near Denbigh where the *Cardamine* was said to grow. (Such is the case with all the stations of this plant reported by the old authors. It would seem the attention of Botanists should rather be directed northward. E.) The specimens before me were gathered wild in Scotland, and sent me by Mr. Milne. (Of these being genuine there can be no doubt. E.) P. Aug.

(2) *Leaves winged.*

C. IMPA'TIENS. Leaves winged: leafits spear-shaped, toothed or cut: stipulæ fringed. E. Bot.

E. Bot. 80—(*Fl. Dan.* 1339. E.)—*J. B.* ii. 886. 1—*Barr.* 155—*Ger. Em.* 260. 7—*Park.* 1241. 4—*H. Ox.* iii. 4. 1—*Pet.* 47. 7—*Barr.* 155.

Leafits of the upper leaves nearly entire, of the middle ones toothed, of the lower ones considerably cut and jagged. *Stipulæ* crescent-shaped, half embracing the stem. *Petals* small, white, deciduous; sometimes wanting. (The *stem* is not unfrequently branched, usually a foot and a half high, rather crooked. *Pods* peculiarly sensitive to the stimulus of heat; on warm sunny days they may be observed audibly exploding, and with a contractile force, which, after expelling the seeds, causes the detached valve to form a compact volute. E.)

IMPATIENT LADIES'-SMOCK. Mountainous meadows by the sides of rivulets, on rocks and moist stony places, in Derbyshire, and Westmoreland. Giggleswick Scar; rocks opposite Matlock Bath, Derbyshire. Mr. Woodward. (On loose earth thrown up for a quarry above Lench Ford, nearly opposite Shrawley, and in Cliffy Wood near Hanley, Worcestershire. Dr. Stokes. Plentiful in a hedge near the parsonage at Slinfold, Sussex. Mr Borrer, in Bot. Guide. Barrow hill, near Dudley. Bree, in Purt. Rocks by the river Clyde, above the Falls. Hopkirk. E.) A. May—June.

C. HIRSU'TA. Leaves winged, leafits opposite, without stipulæ.

(*E. Bot.* 492. E.)—*Cam. Epit.* 270—*Scop.* 38, *ut* ii. *p.* 21—*Barr.* 455—*J. B.* ii. 888.

(Neither the hairiness, the absence of the two shorter stamens, or other characteristics of this species, are invariable. In height from three inches to nearly a foot. E.) *Stems* generally numerous, (branched, the central one upright, the rest declining, hairy. *Root-leaves* very numerous, forming a circle on the ground; *leafits* roundish, three or four pair, with an odd one much larger; *stem-leaves*, two or three on each stem, roundish or spear-shaped. Woodw. (*Flowers* white, small. *Pods* erect, not invariably hirsute; stigma almost sessile. E.)

HAIRY-LEAVED LADIES'-SMOCK. (Welsh: *Hydyf blewog.* E.) *Cardamine hirsuta* β Huds. *Cardamine minor arvensis.* D. Lhwyd, in R. Syn. 300. n. 4. (*Cardamine impatiens altera hirsutior.* R. Syn. 300, is *C. flexuosa.*) Gravelly soil, on the driest banks as well as in moist places, and by the sides of rivulets and springs, not uncommon.

A. March—June.*

C. FLEXUO'SA. Stem zigzag: leafits toothed, mostly alternate, unequal at the base.

Curt. 277—*Fl. Dan.* 735—*Walc. C. hirsuta.*

Stem eight to twelve inches high, stiff, angular, ribbed, zigzag, being bent at the setting off of every leaf or branch. *Leaves*, root-leaves lying in a circle on the ground, on leaf-stalks. *Leafits* five or six pairs, with an odd one at the end: egg-shaped, irregularly toothed, unequal at the base. *Stem-leaves* alternate, irregular, sessile. *Leafits* three to five pairs, with an odd one which is larger; some sessile, others on short leaf-stalks, irregularly toothed. *Fruit-stalks* cylindrical, but compressed; slanting. *Calyx* half the length of the blossom: generally purplish. *Blossom* petals white, rounded at the end. *Stamens* six, longer than the blossom. *Anthers* yellow. *Pistils*, summit pale green. *Seed-vessels*, pod straight, nearly upright, cylindrical, but compressed. *Seeds* six on each side of the partition. *Plant* somewhat hairy; hairs few, soft, white, mostly on the lower part of the stem and the edges of the leaves. *Flowers* in a terminal corymb, which in time shoots out in form of a spike-like bunch; and the full grown plants sometimes put forth axillary bunches.

This plant has been imagined by some to be only a var. of *C. hirsuta*, but it has been more generally taken for *C. parviflora* of Linnæus, whilst others have supposed those two species only accidental varieties. It differs from the former in having uniformly six stamens, and from the latter in being hairy, in its stamens being longer than the blossom, and in its fruit-stalks being slanting upwards, not horizontal. It does not appear that *C. parviflora* has yet been found in this Island. (Though we do not feel confident of the permanency of the specific distinctions attributed to this plant, deference to the opinion of our Author and that of several respectable Botanists, induces us to await the result of further observation. Dr. Hull remarks, "I am informed that *C. hirsuta* does not become like *C. flexuosa* on cultivation, and think the latter a strongly marked variety, if not a distinct species." E.)

ZIGZAG LADIES'-SMOCK. *C. parviflora.* Lightf. With. Ed. ii. not of Linn. *C. hirsuta.* Weber. Curt. Walc. Huds. Fl. Brit. *C. flexuosa.* With. Sym. Hull. Purt. Hopk. *Cardamine impatiens altera hirsutior.* R. Syn. 300. Ditches, woods, shady, wet, and boggy places. Rookery at Edgbaston, near Birmingham, and in ditches at the upper end of the pool. (The Rough at Alcester mill. Purton. E.) A. May—July.

C. PRATEN'SIS. (Leaves without stipulæ: E.) leafits of the root-leaves roundish, toothed; those of the stem-leaves spear-shaped, very entire.

Curt. 175—(*E. Bot.* 776. E.)—*Kniph.* 12—*Fl. Dan.* 1039—*Woodv.* 30—*Walc.*—*Sheldr.* 109—*Blackw.* 223—*Lob. Obs.* 106. 2, *and Ic.* i. 210. 1—

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* The young leaves make a good salad; much resembling water cress in taste.

Ger. Em. 259. 1—*Ger.* 201. 1—*Clus.* ii. 128. 2—*Dod.* 592. 2—*Lob. Obs.* 106. 3, *and Ic.* i. 210. 2—*Ger. Em.* 259. 2—*Ger.* 201. 2—*Park.* 826. 2, *and* 1239. *f.* 4—*H. Ox.* iii. 4. 7—*Pet.* 47. 5—*Lonic.* i. 159. 5—*Fuchs.* 325—*J. B.* ii. 889. 1—*Trag.* 83. 1.

Leafits of the lower stem-leaves egg-shaped, higher up spear-shaped, those of the upper strap-shaped. Woodw. *Flowers* large, paler or deeper purplish red. (*Stem* upright, stiff, about a foot high, bearing a handsome terminal corymb. *Anthers* yellow. E.)

(In shady situations the root-leaves occasionally put forth buds or bulbs, the embryos of new plants; hence, and from the root being somewhat toothed and tuberous, Mr. Brown avails himself of a supposed affinity between this plant and *Dentaria bulbifera*, which he includes in the present genus. E.)

MEADOW LADIES'-SMOCK. CUCKOO FLOWER. (Irish: *Billar Gragan.* Welsh: *Hydyf y waun; Blodeuyn y gôg.* E.) Meadows and moist pastures. • P. April—May.*

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* The virtue of the flowers in hysteric and epileptic cases was first mentioned by Ray, in his letters, published by himself; and since then, by Sir W. Baker in Med. Tr. i. 442. The dose is from 20 to 90 grains twice a day. Do they not act like *Erysimum Cheiranthoides* in the epilepsies of children, and cure the disease by destroying the worms in the stomach and intestines, which were the cause of the fits? I have accounts of their success in young epileptics, from good authority; but have never been fortunate enough to see them of much use in hysterical cases. Whilst in Cornwall in the year 1798, I had the pleasure of meeting with the Rev. Mr. Gregor, who told me that the flowering tops of the Ladies'-smock had been successfully used by his family for some generations in the cure of epilepsies, and some cases he mentioned to me were not likely to have been owing to worms. Our medical practitioners have only used the flowers, but Mr. Gregor's family use the flowering tops. Can this account for the different success? (The evidence of Mr. Gregor has been fully confirmed by the testimony of others entirely unconnected with his family, and resident in a different part of England. Lady Holt, late of Aston Hall, Warwickshire, and her sister, Mrs. Bracebridge, were long celebrated for curing many inveterate cases of epilepsy by the use of Ladies'-smock. They were accustomed to give three doses a day, twelve grains each, of the powder carefully prepared from the dried heads of the plant, and to continue its use many weeks. The failure of this remedy may often be attributable to improper management in the preparation; and the virtue may easily be dissipated by too much heat. The whole flowering head should be pinched off the stalk together, when in full bloom and before the seeds are formed, and when free from either dew or rain. Spread the heads upon pewter dishes before a brisk fire, stirring and moving them. Rub them to a powder when sufficiently dry; pass it through a sieve; and put it into clean dry bottles. Cover the bottles with leather, (no cork), having holes pricked through it. Two bushels of flowering heads will yield about eight quarts of this fine powder. Thus preserved it will keep to a second year.—The leaves may be eaten as other cress. The juice expressed from the whole plant is considered an excellent antiscorbutic in northern countries, where salt meat is much used. The double blossomed var. is an

thraldom of superstition, those who are inclined to discard such puerilities, may find a more rational interpretation of the vernacular cognomen, and one at least as consistent with the appearance of nature,

"When *Ladies'-smocks* of silver white,
Do paint the meadows with delight;"

Thus resembling linen exposed to whiten on the grass,

"When maidens bleach their summer smocks."

Var. 2. (*Flore pleno.*) Double-flowered, viviparous.

Meadows about Ross Hall, near Salop. Mr. Aikin. In a field south-west of the Tap-house at Hagley, Worcestershire. (Fields near the vicarage at Keswick. Mr. Winch. In a lane at Brookfield, Bitton, near Teignmouth. Mr. Frederick Russell. E.)

C. AMA'RA. (Leaves winged, without stipulæ: leafits of the root-leaves roundish: those of the stem-leaves tooth-angular: stem radicating near its base. E.)

Curt. 158—(*E. Bot.* 1000. E.)—*Allioni* 56. 1—*Herm. Par.* 203—*J. B.* ii. 885—*C. B. Pr.* 45. 1—*Park.* 1239. 3—*Pet.* 47. 1.

(*Root* toothed. *Stems* one foot or more high, inclining to flexuose, angular, strong, and almost woody, often decumbent, and then radicating. *Leaves* nearly smooth. E.) *Suckers* cylindrical, crooked. *Leafits* irregularly indented and thinly set with little teeth. *Bunches* terminal and lateral. *Flowers* white, (rather larger than those of the preceding. *Anthers* purple. E.)

BITTER CRESS or LADIES'-SMOCK. Near purls of water, on the banks of rivulets, in boggy places, or moist meadows and pastures. Dorking, Surry; Braintree, Essex; Middleton, Warwickshire; Lewisham, Harefield, Uxbridge. Battersea, Chelsea; and Great Comberton, Worcestershire. Norwich, Mr. Crowe. Bungay. Mr. Woodward. (Fitz, near Aspatria, Cumberland. Rev. J. Dodd. St Bernard's Well, Edinburgh. Lightfoot. Roslin woods. Mr. Arnott. Grev. Edin. Aston, near Birmingham. E.) P. April—May.*

(NASTUR'TIUM. *Pod* nearly cylindrical, oblique: valves concave, without keels: *Stigma* obtuse, notched: *Cal.* spreading, equal at the base. E.)

N. OFFICINA'LE. Leaves winged: leafits roundish, heart-sharped. E.)

Fl. Dan. 690—(*E. Bot.* 855. E.)—*Woodv.* 18—*Fuchs.* 723—*J. B.* ii. 884—*Trag.* 82. 2—*Dod.* 592. 1—*Lob. Obs.* 105. 3, *and Ic.* i. 209. 1—*Ger. Em.* 257. 5—*Park.* 1239. 1—*H. Ox.* iii. 4. 8—*Pet.* 17. 2 *and* 3—*Matth.* 487—*Lonic.* i. 114. 2—*Blackw.* 260.

Blossom white, terminal. (*Root* fibrous. *Stems* decumbent, and floating, striking root from the underside. *Leaves* alternate, winged-lyre-shape,

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a practice more general in the golden age, when families spun and prepared their own linen, and enjoyed the advantages of other homemade essentials. It must be confessed, however, to speak with prosaic accuracy, that the purple tint with which these pretty flowers are embued, somewhat sullies the emblematic representation of spotless purity, rendering it, indeed, but too faithful a picture of sublunary excellence, never absolutely perfect. The other familiar name, (*Cuckoo-flower*), is equally applied to several plants which salute with their welcome blossoms our favourite herald of Summer. E.) Goats and sheep eat it. Horses and swine refuse it. Cows are not fond of it.

* Sheep eat it. Cows are not fond of it. Linn. The young leaves are acrid and bitterish, but do not taste amiss in salads. Lightfoot. They are much used for that purpose in Lancashire. Mr. Caley. The leaves are pungent, bitter, and aromatic, in such a degree as to promise very considerable medical uses. The beautiful *Papilio Cardamine*, with lively orange-tipped wings, the *Wood lady* of the London fly-fanciers, lives upon the different species.

smooth; the leafits of the lower ones rounder, nearly heart-shaped, wavy. Fl. Brit. All the *leaves* rather succulent. *Pods* nearly an inch long. E.)

COMMON WATER CRESS. (Welsh: *Berwr y dwr; Berwr y flynnonau. N. officinale.* Br. in Ait. De Cand. Sm. Hook. Grev. *Sisymbrium Nasturtium.* Linn. Lightf. With. Curt. Fl. Brit. Willd. Oed. E.) Springs, brooks, and rivulets. B. June—July.*

N. SYLVES'TRE. Leaves winged: leafits spear-shaped, deeply serrated. E)

Curt. 153—*Kniph.* 12—(*E. Bot.* 2324. E.)—*Ger.* 190. *Ger. Em.* 248. 6—*Park.* 1242—*Pet.* 46. 5—*H. Ox.* iii. 6. 17—*Fuchs.* 263—*J. B.* ii. 866. 2.

Root creeping remarkably. *Leafits* of the root-leaves somewhat egg-shaped, those of the stem-leaves spear-shaped. *Flowers* numerous, small, yellow. *Pedicles* declining. *Blossom* a little longer than the coloured calyx. *Nectary glands* four, in a circle. *Seeds* generally abortive, the plant increasing by root. Woodw. *Stem* and *fruit-stalks* flexuose. (*Pods* short, sometimes curved upwards. *Stem* about one foot high, leafy, angular, branched. E.)

CREEPING YELLOW CRESS. WATER ROCKET. (*N. sylvestre.* Br. in Ait. De Cand. Sm. Hook. *Sisymbrium sylvestre.* Linn. With. Curt. Willd. Fl. Brit. E.) Marshy and watery places, and banks of rivers. Banks of the Thames; of the Aire below Leeds; on Bungay Common: the only place in Norfolk and Suffolk where it has been found. Mr. Woodward. Banks of the Severn, near Worcester. Stokes. (In Bedfordshire, frequent. Abbot. Shores of Tyne, below Benwell. Winch Guide. By the side of the water of Ea, below Kirkmichael house. Lightfoot. E.) P. June—Sept.

N. AMPHIB'IUM. Pods elliptical; leaves wing-cleft, serrated: petals longer than the calyx: (root fibrous. E.)

Fl. Dan. 984—*Kniph.* 12—(*E. Bot.* 1840. E.)—*C. B. Pr.* 38. 1—*Park.* 1229. 2—*Pet.* 49. 8—*H. Ox.* iii. 7, *row* 3. 4—*Ger.* 180—*Ger. Em.* 2[illegible]1. 2.

When growing in water of some depth the *leaves* below the surface are strap-shaped, winged, nearly like those of *Hottonia;* those above spear-shaped, serrated. Linn. *Stem* upright, (two or three feet high, E.) branched. *Leaves* spear-shaped, variously toothed, smooth, half embracing the stem. *Fruit-stalks* much longer than the pods, and much longer than in *N. terrestre. Pod* oblong, very short, smooth, at first expanding, afterwards hanging down. Woodw. *Stem* smooth, scored, crooked at the joints. *Leaves* egg-spear-shaped, scolloped and set with little teeth at the edge, with often from one to three winged clefts at the base. *Leaf-stalks* semi-cylindrical, channelled above. *Fruit-stalks* while in flower about half an inch long, and upright, but afterwards bending back and pointing downwards. *Flowers* yellow, numerous, in clusters.

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* Universally used as an early and wholesome spring salad: (and may be easily increased by transplanting into mud, and not cutting till the second year. E.) It is an excellent antiscorbutic and stomachic, with less acrimony than Scurvy-grass. It is an ingredient in the anti-scorbutic juices.' (The expressed juice, which contains the peculiar taste and pungency of the herb, may be taken in doses of an ounce or two, for the purposes recommended by Hoffman.—Of late Water Cress has has been cultivated on many acres of land in the vicinity of London, whence the markets are supplied daily throughout the year. The environs of Paris also provide the same article from gardens appropriated to its culture. In France it is not only used as salad, but dressed like spinach, and the picked leaves served with roasted fowl compose the favourite *Poulet au cressons.* E.)

Var. 2. *Fol. laciniat.* Leaves with clefts extending nearly to the mid-rib.

Kniph. 3—*Ger.* 185. 2—*J. B.* ii. 867. 2—*Pet.* 49. 10—*Lob. Ic.* i. 319—*Ger. Em.* 240. 2—*Park.* 1228. 1.

GREAT WATER ROCKET or RADISH. AMPHIBIOUS YELLOW CRESS. *N. amphibium.* Br. in Ait. De Cand. Sm. Hook. Grev. *Sisymbrium amphibium.* Linn. Lightf. (β). With. Willd. Oed. Fl. Brit. E.) *Radicula sylvestris seu palustris.* R. Syn. 301. Watery places, ditches, and banks of rivers. P. June—Aug.

N. TERRES'TRE. Leaves wing-cleft, (unequally toothed: root simple: pods curved: petals not exceeding the calyx. E.)

Curt. 289—*Fl. Dan.* 931—(*E. Bot.* 1747. E.)—*J. B.* ii. 867. 1—*C. B. Pr.* 38. 2—*Park.* 1228. 1. *f.* 2—*H. Ox.* iii. 7, *row* 3. 3—*Pet.* 49. 9.

(*Root* spindle-shaped, small. *Stem* frequently upright, a foot high, leafy, furrowed, smooth. E.) *Leaves* segments confluent with the mid-rib, often pointing backwards, alternate or in pairs, elliptical, or egg-shaped serrated, or toothed here and there. Hall. *Petals* yellow, blunt, minute, very entire, somewhat shorter than the calyx.

(ANNUAL YELLOW CRESS or ROCKET. Welsh: *Berwr melyn blyn-yddawl y dwr. N. terrestre.* Br. in Ait. Hook. Sm. *N. palustre.* De Cand. Grev. *Sisymbrium terrestre.* Curt. With. Fl. Brit. *S. amphibium palustre.* Linn. *S. palustre.* Pollich. Willd. E.) Edges of wet ditches, and on ground occasionally overflowed. In the environs of London, as Tothil Fields, and between the Magdalen Hospital and Lambeth Marsh. Curtis. Bungay Common. Mr. Woodward. Near Stafford, on the road to the Castle hill. Stokes. (On the banks of the Cam, Isle of Ely. Rev. Dr. Goodenough. Fl. Brit. Borders of Prestwick Carr, Northumberland. Winch. Guide. In wet places near the race stand, Warwick; close to the bridge at Baginton. Perry. Claypits at Beaumaris. Welsh Bot. North bank of Loch Leven. Mr. Arnott. Hook. Scot. E.) A. June—Sept.

(SISYM'BRIUM.* *Pod* nearly cylindrical: *Stigma* capitate, notched. E.)

(S. OFFICINA'LE. Pods pressed close to the stalk, awl-shaped: leaves notched, hairy: stem hispid. E.)

Curt. 326—(*E. Bot.* 735. E.)—*Ludw.* 187—*Fl. Dan.* 560—*Woodv.* 244—*Sheldr.*—*Blackw.* 28—*Ger.* 198. 1—*Pet.* 46. 3—*Fuchs.* 592—*J. B.* 863—*Dod.* 714—*Ger. Em.* 25[illegible]. 1—*Trag.* 102. 1—*Lonic.* i. 165. 1—*Lob. Adv.* 69, *and Ic.* i. 206. 1.

(*Stem* about two feet high, often purplish, branches towards the top, expanding. E.) *Leaves* slightly downy, the lower winged, the upper halberd-shaped. *Calyx* about half as long as the petals. (*Blossoms* pale yellow, numerous. *Germen* cylindrical, tapering upwards. *Summit* flat, with a shallow notch. *Pods* conical, obscurely quadrangular, nearly an inch long, downy, on short stalks. E.)

COMMON HEDGE MUSTARD, or WORM-SEED. BANK CRESS. (Welsh: *Arfog meddygawl. S. officinale.* Scop. Br. in Ait. De Cand. Sm. Hook.

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* (An ancient Greek name σισυμβριον, but not readily interpreted. E.)

Grev. *Erysimum officinale.* Linn. Lightf. With. Curt. Fl. Brit. Willd. Oed. E.) Under walls and hedges, road sides and among rubbish.
A. May—June.*

S. So'phia. Petals smaller than the calyx: leaves doubly pinnatifid, (rather hairy. E.)

(*E. Bot.* 963. E.)—*Ludw.* 73—*Fl. Dan.* 528—*Sheldr.*—*Kniph.* 6—*Dod.* 133 2—*Lob. Obs.* 426. 1, *and Ic.* i. 738. 2—*Ger. Em.* 1068—*Park.* 830 3—*Pet.* 46. 12—*Fuchs.* 2—*J. B.* ii. 886. 2—*Trag.* 338—*Ger.* 910. 1 *and* 2—*Lonic.*

(*Root* spindle-shaped, small. *Stem* two feet high, upright, branched, leafy. *Leaves* alternate. Fl. Brit. E.) *Pods* an inch long, stiff, crooked, upright. *Seeds* yellow. *Blossoms* yellow, small. (*Calyx* nearly as much coloured. E.)

Flix-weed. (Irish: *Finel Muire.* Welsh: *Piblys.* E.) Walls and amongst rubbish.
A. July.†

S. I'rio. Leaves notched, toothed, without hairiness; as is the stem: pods upright.

Jacq. Austr. 322—*Curt.* 311—(*E. Bot.* 1631. E.)—*Park.* 834. 4—*H. Ox.* iii. 3, *row* 3. 3—*Pet.* 46. 4—*Col. Ecphr.* 265.

Stem nearly smooth, two feet high. *Leaves* variously toothed and cut, sometimes with winged clefts at the base, generally terminated by a long spear-shaped lobe; the upper usually simple, spear-shaped, with one or two teeth towards the base. *Pods* about two inches long, strap-shaped, upright, but not pressed to the stem. *Fruit-stalks* short. Woodw. *Blossoms* small, yellow. (*Root* spindle-shaped: *herb* pungent to the taste. E.)

(London Rocket. E.) Broad-leaved Water Cress. Old walls and amongst rubbish. (On London Bridge and the walls near it. Mr. Woodward. On the walls of Berwick-upon-Tweed. Ray. Under Merton Wall; Rose Lane, Oxford. Sibthorp. On walls at Wisbeach, Mr. Skrimshire. Road sides near Eton, Bucks. Mr. Gotobed, in Bot. Guide. E.
A. May—Aug.

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* It is warm and acrid to the taste; and when cultivated, is used as a spring pot-herb. Birds are fond of the seeds. Sheep and goats eat the plant. Cows, horses, and swine refuse it. By means of this herb Rondeletius cured a hoarseness, occasioned by loud speaking, in three days. Linn.—"Juice of Hedge Mustard is beyond any thing in ulcers of the throat. This was found by experience by the Hon. Harry Gray, when all advice of doctors and surgeons availed nothing. This from his own mouth."—M. S. note in a copy of Parkinson which formerly belonged to Mr. Saunders, surgeon at Stourbridge. (Dr. Cullen attests the like good effect, and advises the juice to be mixed with honey and sugar in equal quantities. E.)

† The pods retain the seeds all winter, and small birds feed upon them. The plant has been prescribed in hysteric and dysenteric cases; (whence the old English name; E.) and the seeds are given to destroy worms; (but it has long lost the high reputation which once obtained for it the designation of "*Sophia Chirurgorum,*" and affords a striking instance, among many others, of plants, whose extravagant commendations by ancient writers, both domestic and foreign, in these more enlightened times

"Stand like the forfeits in a barber's shop,
As much for mock as mark." E.)

Sheep and cows eat it. Horses and goats are not fond of it. Swine refuse it.

(BARBA′REA. *Pod* quadrangular, two-edged: *Seeds* in one row: *Cal.* erect: *Glands* within the shorter filaments. E.)

B. VULGA′RIS. (Lower-leaves lyre-shaped, terminal segment nearly circular: upper leaves inversely egg-shaped, toothed. E.)

(*E. Bot.* 443. E)—*Fl. Dan.* 985—*Walc.*—*Ger.* 188—*Fuchs.* 746—*J. B.* ii. 869—*Trag.* 101. 2—*Lonic.* i. 165. 2—*Dod.* 712. 1—*Lob. Obs.* 104. 2, *and Ic.* i. 207. 2—*Ger. Em.* 243—*Park.* 820—*H. Ox.* iii. 5. 11 *and* 12—*Pet.* 46. 1—*Matth.* 572.

Stems two feet high, strong, with about eight deep furrows, and as many sharp ridges. *Leaves* half embracing the stem, winged, the terminal leafit egg-shaped, notched. *Calyx-leaves,* in the flowers not yet expanded, green, and two of them larger, with a helmet-shaped hollow at the top. *Pods* an inch long, slender, somewhat cylindrical, slightly flatted, not very sensibly four-edged. (*Blossoms* yellow, numerous, in rounded clusters, which afterwards elongate. E.)

BITTER WINTER-CRESS. YELLOW ROCKET. (Welsh: *Berwr y gauaf. Barbarea.* Dod. Ger. Bauh. *B. vulgaris.* Br. in Ait. De Cand. Hook. Sm. Grev. *Erysimum Barbarea.* Linn. Lightf. With. Willd. Oed. Fl. Brit. E.) Banks on the sides of running streams, watery places, and sometimes in cultivated fields. In Devonshire, and plentiful in Launceston Castle, Cornwall. (Not very common in Scotland. Water of Leith. Dr. Parsons. More frequent about Glasgow. Hopkirk. E.)
P. May—Oct.*

(B. PRÆ′COX. Lower leaves lyre-shaped; upper deeply wing-cleft, with linear-oblong, entire segments.

E. Bot. 1129—*Pet.* 46. 2.

Stem about eighteen inches high, in moist situations two feet. *Radical-leaves* very numerous, exactly like those of *Nasturtium officinale. Flowers* smaller and paler yellow than those of *B vulgaris. Pods* nearly twice as long as in that species, exactly square, smooth, crowned with a very short permanent style. *Calyx-leaves* cohering, much broader than those of *E. vulgaris.* Sm. Slenderer than the preceding in every part. Hook. E.)

EARLY WINTER CRESS. *B. præcox.* Br. De Cand. Hook. Sm. Grev. *Erysimum præcox* Willd. Fl. Brit. *E. Barbarea β* Linn. With. On a hill half a mile north of Teignmouth, also near Dawlish, Kingsteignton, Honiton, and Bovey Tracey. Rev. Dr. Beeke, Dean of Bristol. About Settle. W. Hustler, Esq. in Whitaker's Craven. St. Bernard's Well. Mr. J. Stewart. Grev. Edin. B. May—Oct. E.)†

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* In Sweden the leaves are used in salads, early in spring, and late in autumn; also boiled as cale. It is sown in gardens as an early spring salad. Linn. and also in England, where it is called *French Cress.* St. Cows eat it. Horses and swine refuse it. Goats and sheep are not fond of it. (Smith considers the above notices as rather belonging to the following species.—With double blossoms, it frequently ornaments our gardens. A minute species of *Tipula*, or Gall-gnat, sometimes renders the flowers like a Hop-blossom; but this metamorphosis does not strictly partake of the nature of galls, as it originates not from the egg, but from the larva, which, in the operation of extracting the seed in some way imparts a morbid action to the juices, causing the flower to expand unnaturally. E.)

† This herb is grateful in salads, tasting exactly like *Nasturtium officinale*, whereas *B. vulgaris* is mucilaginous, and of a nauseous bitter.

ERYS'IMUM.* (*Pod* four-sided: *Cal.* closed: *Summit* a knob, often two-lobed: *Seeds* not bordered. E.)

E. ALLIA'RIA. Leaves heart-shaped.

(*E. Bot.* 796. E.)—*Ludw.* 77—*Fl. Dan.* 935—*Curt.* 144—*Kniph.* 3—*Woodv.* 245—*Walc.*—*Fuchs.* 104—*J. B.* ii. 883—*Lonic.* i 160. 2—*Trag.* 86—*Matth.* 843—*Dod.* 686—*Lob. Obs.* 285. 3, *and Ic.* i. 530. 1—*Ger. Em.* 791—*Park.* 112. 5—*H. Ox.* iii. 10. 6—*Ger.* 650—*Pet.* 45. 1—*Blackw.* 372.

(Whole *plant* smooth, shining, having a strong smell of garlick. *Pods* very long, awl-shaped. Fl. Brit. *Stem* about a foot high, cylindrical, upright, scored, leafy. E.) *Leaves* bluntly and irregularly serrated, veined, alternate, on leaf-stalks. *Flowers* in a corymbus, (white. *Cal.* whitish. E.) *Nectary glands* four, one on the outside of each pair of longer stamens, and one supporting each of the short stamens.

JACK-BY-THE-HEDGE. SAUCE-ALONE. GARLICK HEDGE-MUSTARD. (Irish: *Bo Cicineall; Gairleog Coilleagh.* Welsh: *Arfog arllegog; Troed yr asen.* E) Hedges, ditch banks, and shady places. B. May.†

E. CHEIRANTHOI'DES. Stem much branched: leaves spear-shaped, oblique, waved and obscurely toothed: (pods erect, on spreading stalks. E.)

Jacq. Austr. 23—(*E. Bot.* 942. E.)—*Kniph.* 11—*Fl. Dan.* 923—*Lob. Obs.* 112. 1, *and Ic.* i. 225. 1—*Ger. Em.* 273. 4—*Park.* 868. 3—*H. Ox.* iii. 5. 7 *Pet.* 45. 2—*J. B.* ii. 894. 1.

Seeds oblong, yellowish brown, intensely bitter. Ray. *Stem* one to two feet high, or more, rough, stiff, quite straight, scored. *Leaves* narrow, roughish, the mid-rib running down the stem, the uppermost sometimes a little toothed. *Blossom* small, yellow. (*Cal.* whitish. The *partial flower-stalks* become horizontal as the fruit increases, but the *pods* themselves, an inch long, with valves internally downy, stand erect, and are square, tipped with a minute sessile stigma. Sm. E)

(M. Courtois reports that a proliferous variety of this plant has been perpetuated for several years in the Botanic Garden of Liege. E.)

TREACLE WORM-SEED OR HEDGE-MUSTARD. Osier-holts, and banks of the river near Ely; Ashbourn, Derbyshire; and corn-fields about Elden, Suffolk. Very common amongst turnips near Bungay. Mr. Woodward. Ballast Hills, Sunderland. Mr. Weighell. (Near the parsonage at Slinfold, Sussex. Mr. Borrer, in Bot. Guide. Not rare in Norfolk. Mr. Crowe. By the road near Ipswich leading towards Norwich. Sir J. E. Smith. By the Mole at Brockham, Surry. Mr. Winch. At the head of Loch na Gaul, in Mull. Dr. Walker. Hook. Scot. E.) A. July.‡

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* (From ἐρύω, to draw; because of the astringent virtues of these herbs. E)

† The Prussians eat the leaves with salted meats in spring.—They are useful with lettuce and the colder salads. The seeds excite sneezing. Cows and goats eat it Horses sheep, and swine refuse it. *Curculio Alliaria* feeds upon it. Linn.—When growing in poultry yards fowls eat it, and it communicates an intolerably rank taste to their flesh. In England, it is sometimes eaten with bread and butter, and in Wales much used as a frying herb. (It is considered a powerful diaphoretic, diuretic, and antiscorbutic. E.)

‡ Country people give the seeds to destroy worms, and with good effect.—Horses, cows, goats, sheep, and swine eat it.

(E. **ORIENTA'LE.** Leaves elliptic-heart-shaped, blunt, embracing the stem, smooth: root-leaves inversely-egg-shaped, entire: pods quadrangular. E.)

Jacq. Austr. 282—*Kniph. Brassica campestris*—(*E. Bot.* 1804. E.)—*J. B.* ii. 835. 4—*Clus.* ii. 127. 1—*Dod.* 626. 2—*Lob. Obs.* 215. 3, *and Ic.* i. 396. 2—*Ger. Em.* 536. 2—*Park.* 580. 9—*H. Ox.* iii. 2. 19 *and* 20—*Pet.* 45. 5—*Ger.* 430. 2—*J. B.* ii. 835. 3.

(Whole *herb* smooth and glaucous, one to two feet high; *leaves* rather thick, not strictly perfoliate. E.) *Stem-leaves* egg-shaped, blunt at the end, heart-shaped at the base, very entire. *Petals* white, with a tinge of straw-colour. *Fruit-stalks* expanding. *Pods* three or four inches long, the lower standing wide. Woodw.

(HARE'S-EAR HEDGE-MUSTARD. *E. orientale.* Br. in Ait Sm. *E. perfoliatum.* De Cand. *Brassica orientalis.* Linn. Jacq. With. Willd. Fl. Brit. E.) *B. campestris perfoliata, flore albo.* R. Syn. 293. Huds. Ed. i. *B. Turrita.* Wigg. Corn-fields and cliffs on the sea-coast, near Harwich, and Bardsey, near Orford, Suffolk. Ray. Corn-fields near Godstone, and Marshfield, Sussex. Hudson. (On the Ballast Hills of the Tyne and Wear. Mr. Winch. E.) A. June.

CHEIRANTHUS.* *Germen* with a glandular tooth on each side: *Calyx* closed, two of its leafits tumid at the base: *Seeds* flat.

(C. **FRUTICULO'SUS.** Leaves spear-shaped, acute, (with a dense hoariness underneath: E.) branches angular: stem shrubby.

(*Hook. Fl. Lond.* 147—*E. Bot.* 1934. E.)—*Barr. Ic. t.* 1228.

(*Plant* one foot high. *Leaves* stalked, crowded, mostly very entire; the lowermost with slight serratures. *Petals* notched. *Calyx* sometimes tinged with purple. *Style* short. *Stigma* notched at the end. *Seeds* not winged. It differs from *C. Cheiri* of the gardens in having *leaves* more acute, and white underneath: smaller *flowers* of a pure yellow colour, never exhibiting rust-coloured or blood-coloured blotches. Fl. Brit. May be distinguished also, as Mr. Crowe has remarked, by the *petals* being recurved, and rather stiff; not flaccid and loosely hanging down, as do those of *C. Cheiri*, (the Blood Wall-flower.) But Prof. Hooker doubts the constancy of these characteristics. E.) *Flowers* in terminal bunches, yellow, (very fragrant. E.)

WILD WALL-FLOWER. WALL GILLIFLOWER.† (Welsh: *Melyn y gauaf; Murwyll.* E.) *C. fruticulosus.* Linn. (Fl. Brit. Hook. Scot. *C. Cheiri.* Huds. With. to Ed. 4. and most other English Authors. E.) Old walls, roofs, and rocks. P. May—June.‡

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* (From χειρ, the hand; and ανθος, a flower; supposed to allude to its agreeable scent, always acceptable in hand. or more probably from the pods of some species expanding like fingers. E.)

† (Sometimes, corrupted to *July*-flower; by the old authors *Gillo*-flower, and we conceive originally derived from the Italian *Gialla*, q. d. *Yellow*-flower. E.)

‡ (This well-known and acceptable flower has produced a considerable number of varieties in the garden, as the double, easily propagated by slips; and according to Thomson,

> "The yellow *Wall-flower*, stained with iron-brown,
> And lavish stock, that scents the garden round:".

C. SINUA'TUS. (Stem herbaceous, spreading: leaves downy, glandular, obtuse, somewhat indented, those of the branches entire: pods rough with prominent glands. E.)

(*E. Bot.* 462. E.)—*Lob. Adv.* 140, *and Ic.* i. 330. 2—*Ger. Em.* 460. 2—*Ger.* 374. 2—*J. B.* ii. 876. 1.

Whole *plant* cottony, hoary. *Stem* upright, (two feet high, branched, spreading, leafy. E.) *Root-leaves* broad, spear-shaped, alternately toothed, blunt; *stem-leaves* spear-shaped, blunt, channelled, with two pair of blunt teeth about the middle; *branch-leaves* entire, not toothed. *Petals* flesh-coloured, blunt, whitish at the base. *Pods* several inches long, glandular. *Flowers* large, fragrant only in the evening.

But none which impart a more delightful fragrance than the wild one: to which a highly gifted northern bard beautifully alludes in describing the early days of the "grandame's child:"

"And well the lonely infant knew
Recesses where the *Wall-flower* grew.

I deem'd such nooks the sweetest shade
The sun in all his round survey'd." Marmion Introd. Canto iii.

And again with the same fond, yet judicious partiality,

"The rude stone fence with fragrant *Wall-flowers* gay,
To me more pleasure yield
Than all the pomp imperial domes display."

The Wall-flower has been considered the emblem of fidelity in misfortune, because it attaches itself to the desolate, and enlivens the ruins which time and neglect would otherwise render repulsive. It conceals the savage records of feudal times by decorating the castle walls, occupies the painful void of the mouldering abbey; and weaves a garland on the dilapidated monument, deserted even by grateful memory.

"For this obedient zephyrs bear
Her light seeds round yon turret's mould;
And, undispers'd by tempests there,
They rise in vegetable gold." Langhorne.

Or, as elegantly expressed by another poet of nature,

"But thou, neglected *Wall-flower*, to my breast
And muse art dearest, wildest, sweetest flower!
To whom alone the privilege is given
Proudly to root thyself above the rest,
As genius does, and, from thy rocky tower,
Lend fragrance to the purest breath of Heaven."

Herrick, who (*more antiquorum*) would attribute every thing agreeable to the passion of love; with an ingenuity and pathos scarcely inferior to those of his classical prototypes, ascribes the origin and very name of this favourite flower, to the adventurous spirit of a fair damsel, (long detained in durance vile), who, braving all perils to steal an interview with her "sprightly springal,"

" Up she got upon a wall,
Tempting down to slide withal:
But the silken twist untied,
So she fell, and bruised, she died.
Love, in pity of the deed,
And her loving, luckless speed,
Turned her to this plant, we call
Now the *Flower of the wall*." E.)

(Sea Stock. E.) Prickly-podded Gilliflower. (Welsh: *Murwyll tewbannog arfor. Matthiola sinuata.* Br. E.) Sandy sea shores of Carnarvonshire, Anglesey, and Cornwall, and on the rocks at Aberdovie, Merionethshire. Ray. (Near Pembroke. J. Adams, Esq. Fl. Brit. E.)
B. June—Aug.

(C. inca'nus. Stem shrubby, upright, branched: leaves spear-shaped, blunt, entire, hoary: pods without glands.

E. Bot. 1935—*Mill. Ill.* 55.

Stem two feet high, branched, round, leafy, hoary with pubescence, as is all the herbage. *Leaves* tapering at the base. *Flowers* in terminal bunches, fragrant, naturally of a purplish crimson, often double. *Petals* rounded and nearly entire, their claws pale and greenish. *Pods* long, cylindrical, hoary; their points a little elongated, but simple, blunt, and crowned with the permanent dilated stigma. *Seeds* numerous. E Bot

Hoary Shrubby Stock. (*Matthiola incana.* Br. E.) Discovered by Mr. Dawson Turner, and Mr. W. Borrer in 1806, on the cliffs to the east of Hastings, growing on rocky ledges accessible only to a person let down from the summit by a rope. Such is likewise its natural situation in the south of Europe.
B. June—July. E.)*

HES'PERIS.† *Petals* oblique: *Glands* within the shorter stamens: *Calyx* closed: *Pod* angular, stiff and straight: *Summit* forked, with converging lobes.

(H. matrona'lis. Stem upright: leaves egg-spear-shaped, toothed: petals blunt: pods irregularly tumid. E.)

(*E. Bot.* 731. E.)—*Jacq. Austr.* 347—*Fl. Dan.* 924 *and* 921—*Rupp. a. Hall. at p.* 78—*J. B.* ii. 878. 2—*Clus.* i. 297. 1—*Dod.* 161. 1—*Lob. Obs.* 175. 1. *and Ic.* i. 323. 2—*Ger. Em.* 462. 1—*Park.* 1682. 3—*H. Or.* iii. 10, *Tour* 1. 1.

Stem hairy, about two feet high, simple or branched. *Leaves* hairy, irregularly tooth-serrated, either sessile or on short leaf-stalks; not halbert-shaped, rather occasionally subcordate. *Flowers* large, purplish red, in a terminal spike-like bunch. *Petals* rounded at the end. *Fruit-stalks* expanding. Sp. pl. refers the fig. of Dod. 161 to *H. matronalis*, and that of Clus. i 297. 1. to *H. inodora*; but these figures, being both impressions from the same block, a doubt arises whether these two species are really distinct. Specimens which I collected in Cornwall agree perfectly with the fig. of Jacquin and the Flora Danica. (It is now generally agreed that they are one and the same species, with due preference to the original trivial name: the secondary one, indeed, proving inapplicable, as the plant, by no means renouncing its classical *generic* title, exhales an agreeable fragrance in the evening,‡ and also, it must be admitted, in a moist atmosphere during the day. E.)

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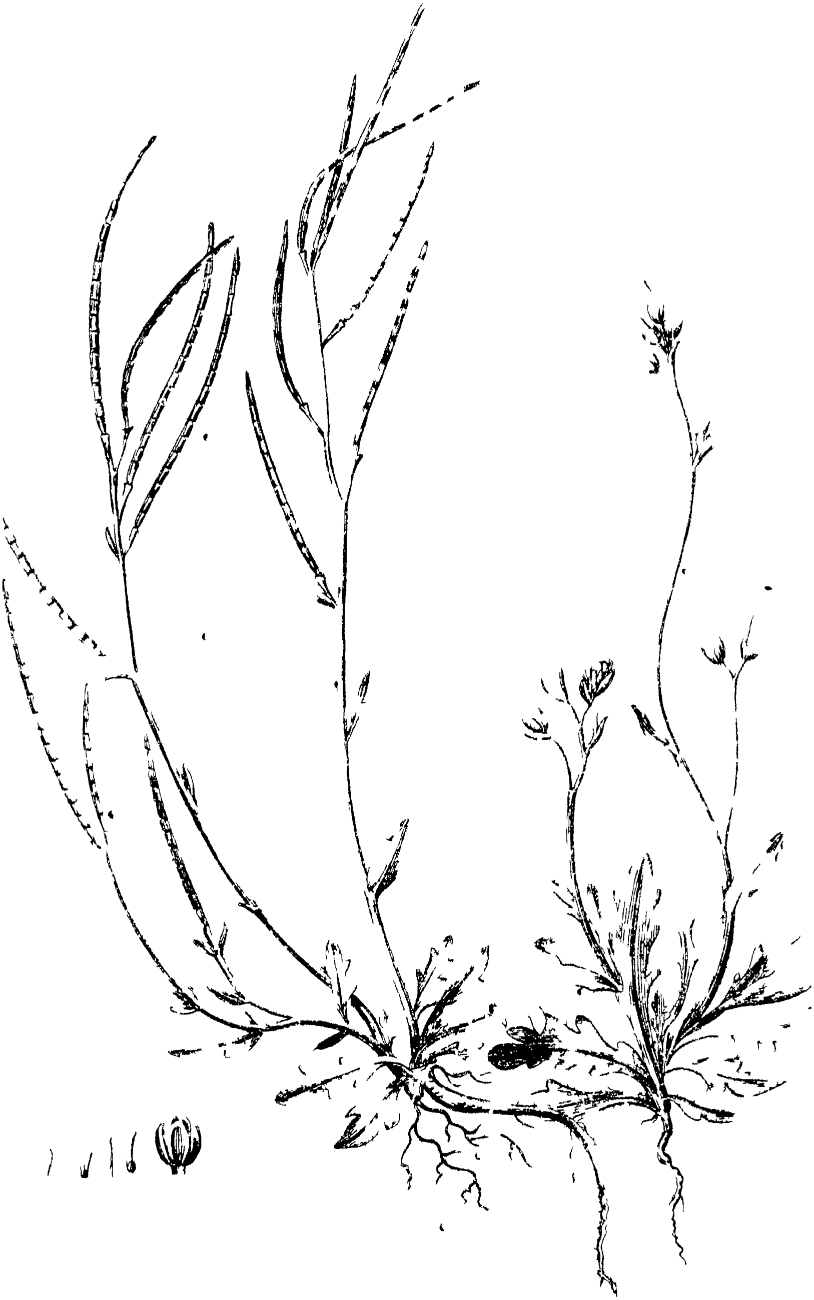
* (By cultivation this species becomes the *Queen's Stock*, rivalling in size and beauty the celebrated Brompton Stock. *Phalæna meticulosa* and *Pronuba* are nourished by the above species. E.)

† (From ἑσπερος, Hesper or *Vesper*: as though dedicated to the Evening Star, and greeting her ascension with a rich perfume. E.)

‡ (A peculiarity thus figuratively improved.

"Nay, let our shadowy beauty bloom
When the stars give quiet light
And let us offer our faint perfume
On the silent shrine of night.



Arabis stricta

DAME'S VIOLET. (*H. matronalis.* Linn. Lightf. Br. Willd. De Cand. Hook. Sm. Grev. *H. inodora.* Linn. Huds. With. Jacq. Oed. Willd. Fl. Brit. E.) Pastures and hedges. On the banks of rivulets about Dalehead, Cumberland, and Grassmere, Westmoreland. Ray. About Falmouth. (At Southover, near Lewes, Sussex. Mr. Borrer. Near the old castle of Airly, Angus-shire. Mr. J. Mackay, in Fl. Brit. About Dover. Mr. W. Christy. Bank below Arthur's Seat. Mr. Arnott. Water of Leith. Mr. J. Stewart. Grev. Edin. E.) P. May—June.

A'RABIS. *Glands* four, within the leafits of the calyx: *Pod* long, compressed, strap-shaped: (*Seeds* in a single row. E.)

A. THALIA'NA. (Leaves hairy, more or less toothed: radical ones stalked, oblong: stamens not much shorter than the petals: stem branched: pods pointing upwards. Sm. E.)

Curt.—(*E. Bot.* 901—*Fl. Dan.* 1106. E.)—*Pollich.* ii. *at p.* 243—*Pluk.* 80. 2—*J. B.* ii. 870. 2—*H. Ox.* iii. 7. 5—*Pet.* 48. 2—*Thal.* 7. D—*Pet.* 48. 1—*Barr.* 269 *and* 270.

Root-leaves disposed in a circle on the ground, hairy; those of the stem nearly smooth. *Flowers* small, white. Hall. *Stem* one inch to more than a foot high. *Leaves,* hairs at the base simple, those on the edges and surface dividing into two or three forks. *Nectary glands* so very minute as scarcely to be discovered even with a magnifier. Curt. (*Pods* about an inch long, slightly curved. After scattering its seeds in May it soon withers and disappears. E. Bot. E.)

(COMMON WALL CRESS. TURKEY-POD. Welsh: *Berfain cyffredin.* E.)
Walls, roofs, dry pastures and corn-fields. (A. April. E.)

A. STRIC'TA. (Leaves toothed, obtuse, bristly: those of the root lyrate. those of the stem semiamplexicaul, oblong: pods two-edged, upright: stems hairy, calyx smooth. E.)

(PLATE XXVII.—*Hook. Fl. Lond.*—*E. Bot.* 614. E.)—*Velley Mar. Pl.* (*gigantic.*)

(*Root* branched. *Stems* several, three to five inches high, herbaceous, simple, (or the central one sometimes branched upwards, in the older plants ligneous, two or three inches long, slender, upright. cylindrical, hairy at the base, smooth above. *Root-leaves* many, inciso-dentate, one to two inches long; rough with long, white, rigid hairs; *stem-leaves* three or four, more entire, nearly strap-shaped, less rough. *Flowers* in bunches, large, white. *Fruit-stalks* short. *Petals* inversely egg-shaped, very entire; as long again as the calyx. *Pods* upright, stiff and straight, in a more advanced state longer, and slightly curved, one and a half inch long, two-edged, quadrangular at the base, striated. E.) *Glands* forming a kind of ring round the base of the stamens. Hall.

Call it not wasted—the breath we lend
  To the breeze when no step is nigh;
Oh! thus for ever the earth should send
  Her grateful breath on high.
And love us as emblems, night's dewy flowers,
  Of hopes unto sorrow giv'n,
That spring through the gloom of the darkest hours,
  Looking alone to Heav'n!" E.)

(Bristol or St. Vincent's Rock Cress. E.) *Cardamine pumila Bellidis folio, alpina.* R. Syn. 300. *Arabis arenosa.* Scop. n. 837. Rocks and stony mountainous situations. (St. Vincent's Rocks, near Bristol. On the south side of the river, about a mile below the Hot-wells. Mr. W. Clayfield. After several unproductive searches for this rare, and not very conspicuous plant, on May-day 1827, the Editor had the pleasure to observe it growing above the rocks within a few yards of the flag-staff on the sea-walls, Durdham Down. It is found imbedded on smooth patches of turf, and affects an eastern exposure. Of the station recorded by Hutchinson, Kirkland Fell pasture, Cumberland; Mr. Winch doubts the accuracy. E.) P. May.

(A. his'pida. Root-leaves notched, lyre-shaped, hispid, tufted: stem-leaves spear-shaped, covered with forked hairs: stems smooth, branched from the root: petals spreading.

E. Bot. t. 469—(*Fl. Dan.* 1462. fid. Sm. E.)—*Dill. Elth.* 61. 71—*Pet.* 50. 3 —*Lightf.* 347. *t.* 15. *f.* 2—*Pluk. Phyt. t.* 101. *f.* 3.

(*Roots* rather woody, matted together. *Stems* several, about a span high, ascending, furrowed, bearing few leaves. *Root-leaves* about half an inch long, sometimes smooth, numerous, on leaf-stalks, winged. *Blossoms* small, purple, often white with a purplish border, in clusters much elongated after flowering. *Calyx* blunt, smooth, membranous at the edge. E.)

Alpine or Welsh Rock Cress. *A. hispida.* Linn. Sm. Willd. Br. Hook. *Cardamine petræa.* Huds. Lightf. With. Ed. 3 and 4. *C. hastulata.* E. Bot. at least Smith assures us, on comparing many specimens communicated by Mr. Bingley, that no difference exists but that of the leaves being almost entirely smooth, and less lobed, than they are commonly found in *A. hispida.* E.) Lofty rocks in Carnarvonshire, as Moelyn-rhud, near Festiniog; Clogwyn dû 'r Arddû, and Clogwyn y Garnedd, near Llanberris; and on moist rocks above the Lake Lyn-dû, in great plenty. Mr. Griffith. By the first mile-stone from Shrewsbury to Welsh Pool. Mr. Aikin. (Middleton Dale, Derbyshire. Mr. Coke. Ravine of the Screes, near Wast-water, Cumberland, about 600 feet in perpendicular height. Mr. Wood. On several Highland mountains, as Craig Cailleach, in Breadalbane; Baikeval, in the isle of Rum, abundantly. Hooker, in Fl. Scot. E.) P. May—July.

(A. cilia'ta. Leaves somewhat toothed, oval, smooth, ciliated: radical ones nearly sessile, obtuse; those of the stem semiamplexicaul: stem undivided. Br.

E. Bot. 1746.

Stem cylindrical, smooth, four to six inches high. *Root-leaves* forming a small tuft, often reddish. All the *leaves* smooth an both sides; those of the *stem* small. *Blossoms* white, forming a terminal cluster. *Cal.* tawny, edged with white, half the length of the petals. *Pods* upright.

Fringed Rock Cress. *A. ciliata.* Br. in Ait. Hook. De Cand. Sm. *Turritis ciliata.* Willd. *T. alpina.* Linn. Willd. E. Bot. On cliffs near the sea, rare. By the sea at Rinville, Cunnamara, in the west of Ireland. Mr. J. T. Mackay. Eng. Fl. Rocks near Loch Lea, in Glen Esk. Mr. G. Don. Hook. Scot. B. July—Aug. E.)

A. turri'ta. Leaves clasping the stem: pods recurved unilaterally, flat, strap-shaped: calyx somewhat wrinkled.

(*Hook. Fl. Lond.* 176. E.)—*Jacq. Austr.* 11—*E. Bot.* 178—*Clus.* ii. 126. 2—*Ger. Em.* 272. 2—*Park.* 852. 2—*Pet.* 47. 1—*H. Ox.* iii. 2. 23—*Barr.* 353.

(*Herb* more or less downy. *Root* woody. *Flowers* straw-coloured, small, with spreading borders, in corymbose *clusters*. *Fruit-stalks* short. *Glands* within the shorter, and two without the longer stamens. *Style* very short, permanent. E.) *Stem* one to two feet high, cylindrical, scored, downy, generally simple. *Leaves* hairy on both sides; *root-leaves* oblong, thick, greyish, waved at the edge; *stem-leaves* similar, toothed, regularly decreasing upwards in size; the *upper* more pointed, rather serrated than toothed, not so grey. *Pods* very long, smooth, strap-shaped, compressed, on short fruit-stalks, rising at the base and then bent downwards, forming an elegant curve. Woodw.

TOWER TURKEY-POD. (TOWER WALL CRESS. E.) Old walls and stony places, rare. On Trinity and St. John's College walls, Cambridge. Mr. Woodward. (On the walls of Magdalen College, Oxford. Sibthorp. On the walls of the castle of Cliesh, Kinross-shire. Mr. Arnott, in Hook. Scot. E.) A. May—June—(B. Fl. Brit. E.)

(**A. HIRSU'TA.** All the leaves hispid, toothed: stem leafy, hirsute: pods quite erect. E.)

Dicks. H. S.—(*E. Bot.* 587. E.)—*Jacq. Ic.* i.—*Walc.*—*C. B. Pr.* 42. 2—*Park.* 834. 6—*Pet.* 47. 12—*H. Ox.* iii. 3. 5—*Fl. Dan.* 1040.

(*Stems* several, a foot high, leafy, stiff and upright. *Root-leaves* egg-shaped, toothed; *stem-leaves* spear-shaped, blunt, toothed, semi-amplexicaul, occasionally arrow-shaped at the base. *Pods* slender, smooth, an inch long. *Blossom* white, small. *Bunches* terminal. E.) By cultivation, or in a rich natural soil, it loses most of its hairiness, and grows taller. With.

HAIRY WALL CRESS. (Welsh: *Twr-ged blewog.* E.) Rocks, stony places, old walls and dry mountainous pastures. Banks beyond Midhurst, Sussex. Doody. Switham Bottom, near Croydon. Hudson. About Settle, Yorkshire; King's Park, Edinburgh. Lightfoot. Lakenham, near Norwich. Mr. Crowe. St. Vincent's Rocks, plentifully. Dr. Broughton. Wick Cliffs, Rev. G. Swayne. Baydales, Darlington. Mr. Robson. (Old walls at Ely, Brandon, and Weeting, Norfolk. Mr. Woodward. On walls near Penmon Church, Anglesey. Welsh Bot. Frequent about Cheddar, Somersetshire. E.) P. June.

TURRI'TIS.* (*Pod* very long, angular; valves keeled: (*Seeds* in two rows. E.)

T. GLA'BRA. Root-leaves toothed, hirsute; others very entire, embracing the stem, smooth.

Curt. 253—*Fl. Dan.* 809—(*E. Bot.* 777. E.)—*Clus.* ii. 126. 1—*Lob. Ic.* 220. 2—*Ger. Em.* 272. 1—*Ger.* 212. 1—*Park.* 852. 1—*H. Ox.* iii. 2. 22—*Pet.* 47. 10.

(Whole *plant* erect and straight. E.) *Stem* two to three feet high, simple, cylindrical, slightly scored, smooth. *Root-leaves* spear-shaped, tapering into leaf-stalks, indented towards the base, entire upwards; *stem-leaves* numerous, heart-spear-shaped, generally entire, but sometimes slightly toothed, pale sea-green. *Pods* smooth, numerous, lying close to the stem, and tiled. *Seeds* reddish brown. Woodw. *Pods* when fully grown cylindrical, compressed. *Blossoms* greenish white, in very long and slender terminal bunches.

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* (From *turris*, a tower; but whether in allusion to its form of growth, or not unfrequent station upon such buildings, may be questionable. E.)

SMOOTH TOWER MUSTARD. Meadows, pastures, pits, and waste places, in gravelly soil. (In sand-pits and other places near Charlton Church, E.) and Lewisham, Kent; near Colchester. Spixwort, Norfolk. Mr. Woodward. Lichfield. Mr. Whately. Castle Bromwich. Mr. Jones. In the quarries above Bath, which is one of the stations mentioned by Ray for his *Cardamine Bellidis folio.* Mr. Swayne. St. Vincent's Rocks, near Bristol, which, being another station of Mr. Ray's plant, renders it probable that his *Cardamine* was our *T. glabra.* (On walls near Ovingham, Northumberland; near Gainford, Durham. Mr. Winch. In a wood opposite the Inn at Bowling Bay. Hopkirk. Hook. Scot. E.)
A. May—June.

BRAS'SICA.* (*Calyx* closed: *Pod* nearly cylindrical, with a beak barren or single-seeded: *Seeds* globular. E.)

B. CAMPES'TRIS. Root tapering: stem-leaves uniform, heart-shaped, (pointed, embracing the stem: lower-leaves lyre-shaped, toothed, rather hairy. E.)
(*E. Bot.* 2234. E.)

(*Stem* two feet high, upright, branched, leafy, cylindrical, smooth, rather glaucous. *Lower-leaves* rough with hairs on the veins underneath; all slightly glaucous, paler on the under surface. *Petals* yellow, rather large. *Pods* cylindrical, bluntly four-cornered, reticularly veined, a little swelling out, two inches long, with an awl-shaped beak, quadrangular at the base, striated. Fl. Brit. *Cal.* spreading upwards.

FIELD CABBAGE. WILD NAVEW. *B. campestris.* Linn. Willd. Sm. De Cand. Hook. Grev. In corn-fields, and about the banks of ditches, road sides, &c. At Harwich, and plentifully between Cropredy and Morlington, Oxfordshire. Rev. Dr. Goodenough. Near Broadford, Isle of Skye, and in fields near Forfar. Mr. Mackay. Fl. Brit. Road side from Leith to Queensferry, near Bangholm. Mr. G. Don. Grev. Edin. Bradley near Orford, Suffolk. Rev. Mr. Sutton. Ballast Hills of Tyne and Wear; in fields through the church-yard above the bridge at Kirby Londale. Mr. Winch. E.)
A. June.

B. NA'PUS. Root fusiform, a regular continuation of the stem: leaves smooth; upper heart-spear-shaped, embracing the stem; lower lyrate, toothed. E.)

(*E. Bot.* 2146. E.)—*Ludw.* 165—*Blackw.* 221—*Walc.*—*Fuchs.* 177—*J. B.* ii. 843—*Trag.* 730—*Lonic.* i. 191. 3—*Lob. Obs.* 200. 2—*Ger. Em.* 235. 2—*Park.* 865—*H. Ox.* iii. 2, *row* 3. 2. *f.* 3—*Ger.* 181. 2.

Stem somewhat branched, cylindrical, smooth, about two feet high. *Leaves* smooth, glaucous. *Calyx* yellowish green. *Summit* a flatted knob. *Pod* with frequently three or four gibbosities larger than merely from the enclosed seeds. There is a variety with the leaves hairy at the edge. *Blossoms* yellow, numerous, rather small.

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* (Probably from βρασσω, to boil; being commonly so prepared as an esculent vegetable. E.)

Rape. Cole-seed. (Irish: *Praisseagh buih.* Welsh: *Bresych yr yd.* E.) Salisbury, contrary to usual authority, has reversed the specific names of this and the following. On ditch banks and among corn.
B. May.*

B. RA'PA. Root a regular continuation of the stem, orbicular, depressed: (radical leaves lyrate, rough; those of the stem more entire, smooth. E.)

(*E. Bot.* 2176. E.)—*Blackw.* 231—*Fuchs.* 212—*Trag.* 728—*Matth.* 435—*Dod.* 673. 1—*Lob. Obs.* 98. 1, *and Ic.* 197. 1—*Ger. Em.* 232. 1—*H. Ox.* iii. 2, *row* 2. 1—*Pet.* 45. 7—*Ger.* 177. 1—*Ger.* 177. 2.

Radical leaves deep green, large, spreading. (*Pods* an inch long, cylindrical, veiny. (*Root* succulent, white or purplish, tapering or fibrous below. *Stem* two feet high, upright, branched, smooth. E.) *Calyx* yellow, expanding. *Blossom* yellow, in numerous elongating bunches.

Var. 2. (*R. radice oblonga.* Ger. *R. longum.* Matth. E.) Roots oblong.

J. B. ii. 838—*Matth.* 436—*Dod.* 673. 2—*Lob. Obs.* 98. 2, *and Ic.* i. 197. 2—*Ger. Em.* 232. 2—*H. Ox.* iii. 2, *row* 3. 2. *f.* 1—*Pet.* 45. 8.

Turnip. Knolles. (Welsh: *Meipen.* N.W. *Erfinen.* S.W. E.) Corn-fields, and borders of corn-fields.
B. April.†

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* The roots of the cultivated variety may be eaten like the turnip but they have a stronger taste, and its seeds, which are called Cole-seed, afford a large quantity of expressed oil, called Rape Oil, (particularly serviceable to the wool combers, for which purpose it is extensively cultivated in the Isle of Thanet. E.) What remains after the expressing of the oil is called Oil Cake, and is used for fattening oxen; (as is, with still more advantage, a similar residuum from the Lint-seed of Flax. E.) In Norfolk the cakes are broken to pieces, and strewed on the land as manure. It is thought to be a very efficacious one. About half a ton is laid on an acre. Mr. Woodward. Cows, goats, and swine eat it. (Partridges and pheasants are fond of lying in these crops. E.)

† Turnips are either eaten raw, boiled, or roasted. Pepper is commonly used with them. They relax the bowels, and are supposed to sweeten the blood. They are hurtful to pregnant or hysterical women, and to those who are subject to flatulencies. The juice, well fermented, affords by distillation an ardent spirit, (and may be made into an inferior sort of cyder. E.) The rind is acrimonious. If the roots be kept in sand, or in a cellar, during the winter, they send out white shoots and yellowish leaves, which being rather sweet and not unpleasant to the palate, are used as salad, when other esculent plants are not to be had. But the greatest use of Turnips is in feeding oxen and more especially sheep in winter. (If the seminal leaves be destroyed before the other leaves appear, the plant dies; and, therefore, as the saccharine qualities of the seminal or cotyledon leaves in the Turnip attracts a species of small beetle called by the farmers the *Fly* and *Black Jack*, (*Haltica nemorum*,) which does not attack the proper leaves of the plant, whole crops of this useful vegetable are often destroyed. Farmers do not consider the crop of Turnips safe until the second leaf appears, or, in the language of agriculture, until the plant comes into the *rough leaf.* Thomson's Lect. Mr. Salisbury assures us that the best preventive of *the Fly*, is to be putting manure on the ground in a moist state and sowing the seeds with it, in order to incite the young plant to *grow so rapidly*, as quickly to attain the rough leaf, which is the point of safety. These ravages prevail chiefly in dry seasons. Vid. Dickson's Husbandry. The destruction of the turnip-fly may also be greatly facilitated by a peculiar mode of ploughing suggested by Mr. W. Cowdry, whereby the *pupa* of the insect being deeply buried under the furrow, perishes for want of sufficient sun and heat to bring it to a mature *imago.* The seed should likewise be steeped 24 hours in

B. OLERA'CEA. Root a regular continuation of the stem, cylindrical, fleshy: (all the leaves smooth, glaucous, waved, and lobed. E.)

(*E. Bot.* 637. E.)

(*Root* caulescent some height above ground. *Plant* one foot to eighteen inches high, or more. *Stem-leaves* rather thick, very much waved, and variously indented, sea-green, with frequently a mixture of purple, the *lower* somewhat egg-shaped, sessile; the *upper* mostly strap-shaped. *Flowers* in long clusters, large, yellow. *Calyx* leaves egg-shaped, broad, yellow. *Pods* short, tumid, without a beak. E.) *Seeds* dusky purple.

SEA COLEWORT. SEA CABBAGE. Cliffs on the sea coast. Near Harlech Castle, Merionethshire; Penzance, and other places in Cornwall. Hudson. Abundantly on the sea cliffs at Staiths, near Whitby, Yorkshire. Mr. Robson. (Rocks at Tynemouth Castle. Winch Guide. E.) Inch-Keith and Inch-Colm. Maughan. Grev. Edin. Abundant on Dover Cliffs, along the coast towards Hythe. E.) B. May—June. E.)*

B. MONEN'SIS. (Leaves glaucous, wing-cleft, cut-serrated: stem nearly

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water to accelerate its vegetation. Turnips are also obnoxious to concealed spoilers, which revel in the interior of the roots, as the formidable wire worm; and the small knobs or tubercles, in some places called *Anbury*, having the appearance of disease, are in fact the *nidus* of grubs, probably those of *Curculio contractus*, or *Rynchænus assimilis*, E.)

The *Roota-Baga*, or Swedish Turnip, is generally considered to be a hybrid between the Turnip and Cabbage, hardy, ponderous, and nutritious, but by some suspected to be a distinct species. ' The Agricultural Society bestowed their premium for the cultivation of a field of Turnips grown near Cardiff, in which the roots averaged, one with another, from 20 to 30 pounds weight. (Dr. Blair, in his Essays, gives the following curious account of the wonderful powers of vegetation in Turnips. Seed sown July 2, 1702, appeared above ground in three days; on Aug. 12, one of them weighed two pounds fourteen ounces. An ounce of the seed contained a thousand grains: one of these seeds increased 671,600 times its own weight in six weeks, 111,933 in one week, 666 in every hour, and eleven times its own weight in a single minute! E.)

* Early in the spring the Sea Cabbage is preferred to the cultivated kinds; but, when gathered on the sea coast, it must be boiled in two waters, to take away the saltness. (When blanched, (*Sea Kale*), it is an elegant and acceptable winter vegetable. E.) The roots may be eaten like those of the preceding species, but they are not so tender. The different varieties of cultivated garden Cabbage originate from this, all of which are much in use at our tables. The red Cabbage is chiefly used for pickling. In some countries the white Cabbages are buried when full grown in the autumn, and thus preserved all winter. The Germans cut them in pieces, and, along with some aromatic herbs and salt, press them close down in a tub, where they soon ferment, and are then eaten under the name of Sour Crout.—(Thus taken, it is supposed to discuss the tendency to scorbutic disorders, and, in the form of cataplasm, may be advantageously applied to the breasts to prevent the coagulation of the milk. E.) The Cabbage whilst young is food for *Chrysomela saltatoria*, and afterwards for *Papilio Brassica*. The former may be kept off by strewing the ground with soot; and it is said that the latter will not touch the plants if they be whipped with the green bough of elder. If Cabbages be sowed or planted for several years together in the same soil, the heads become smaller, and the roots knotty. This is occasioned by the larvæ of flies, (and the *Tipula oleracea*. E.)—A horse eat the leaves, but did not seem fond of them. St. Cows grow fat upon them. (The Drum-head Cabbage is usually transplanted into the fields, and grows to an enormous size, and is very profitable.—In the Georgical Essays, Cabbage, particularly the Scotch kind, is strongly recommended as an excellent food for cattle, and substitute for hay. Autumn-sowed plants produce a much heavier crop than those sowed in Spring.—It would appear from Athenæus that even the homely Cabbage has not always been exempt from superstitious homage, especially in Ionia, whose inhabitants were accustomed on solemn occasions to swear by the "*prophetic*" or "*sacred Cabbage*." E.)

leafless, ascending: pods quadrangular, beak *with one to three* seeds. E.)

(*Hook. Fl. Lond.* 205—*E. Bot.* 962. E.)—*Lightf.* 15. 1, *at p.* 347—*Pet.* 46. 7—*Dill. Elth.* 111. 135, *segments entire.*

(*Root* tapering, long, woody. *Stems* six or eight inches high, when very luxuriant taller, and branched. *Flowers* corymbose. *Petals* pale yellow, veined, exceeding the *calyx*, which is hairy at the top. *Herb* when bruised fetid. Sm. E.)

(DWARF SEA CABBAGE. E.) ISLE OF MAN CABBAGE. (Welsh: *Berwr Mon, a Manaw.* E.) *B. Monensis.* Huds. With. Br. *Sisymbrium Monense.* Linn. Lightf. Fl. Brit. Sea shores in sandy soil. In the Isle of Man, between Ramsey and the town: also at Sella Fields Sea-bank, Cumberland; between Marsh Grange and the Isle of Walney, and near Abermeney Ferry, Anglesey. Ray. Isles of Bute, Skye, and Arran, and in Cantire. Lightfoot. (Confined to the western shores of Scotland. Hooker. E.) P. May—July.*

SINA'PIS.† *Cal.* expanding horizontally: *Petals* upright: *Glands* between the shorter stamens and the pistil, and between the longer stamens and the calyx: *Pod* beaked, two-valved.

S. ARVEN'SIS. Pods with many angles, tumid, longer than the two-edged beak: (leaves toothed, ovate, or lyrate. E.)

Curt. 321—*Fl. Dan.* 753—(*E. Bot.* 1748. E.)—*Fuchs.* 257—*J. B.* ii. 844—*Dod.* 675. 1—*Ger. Em.* 233. 2—*Ger.* 199—*Lob. Obs.* 99. 1, *and Ic.* i. 198. 1—*Park.* 862. 3—*H. Ox.* iii. 3. 7—*Pet.* 45. 12.

(One to two feet high. *Stem* and *leaves* harsh with short scattered bristles; the former often purplish; the bristles of the leaves mostly on the ribs or fibres of the under side. *Petals* yellow, without veins. *Calyx* yellowish. *Pod* with a beak nearly half its length, and both, in our specimens, free from bristles. E.)

WILD MUSTARD. CHARLOCK. CORN KALE. (Irish: *Gas an chunnaghta.* Welsh: *Cedw gwyllt.* E.) Corn-fields and borders of corn-fields. A. May.‡

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* (In places where cattle graze, the plant is always eaten down to the root; and probably in poor sandy soil, especially near the sea, it might be cultivated to advantage. It bears seed abundantly. Hooker. E.) The different species of *Brassica* afford nourishment to *Papilio Brassica, Rapæ,* and *Napi; Phalæna fuliginosa; Aphis Brassicæ;* and *Chrysomela Hyoscyami.*

† (From *σινω*, painfully to affect; *ωπας*, the eyes; as by its pungency. E.)

‡ The Scandinavians boil and eat this herb as cabbage, and in Ireland the tender tops are collected for the same purpose.—Cows, goats, and swine eat it. Sheep are very fond of it. Horses generally refuse it. (The seeds are often found mixed with corn, but may be completely separated by skreening. Under the general name of *Charlock,* pronounced *Kedlock* in the midland counties, farmers usually comprehend *S. arvensis* and *nigra, Raphanus raphanistrum,* and *Brassica napus,* as one or other most abound; but the former is the more noxious weed, and should be carefully extirpated. Sold by the name of Durham Mustard, and said to be inferior to the produce of *S. nigra.* Though the greater part of the vegetable excrescences, termed galls, are caused by insects of the genus *Cynips,* they do not always originate from this tribe. Some are produced by beetles, as those on the roots of *S. arvensis,* which are inhabited by the larvæ of *Curculio contractus,* and *Rynchænus assimilis,* according to Kirby and Spence. E.)

S. AL'BA. Pods hispid, tumid: beak very long, slanting, sword-shaped: (leaves wing-cleft. E.)

Curt. 322—*Blackw.* 29—(*E. Bot.* 1677. E.)—*Ger. Em.* 244. 4—*Pet.* 45. 10—*Fuchs.* 538—*J. B.* ii. 856—*Trag.* 101. 1—*Lonic.* i. 164. 2—*Matth.* 563—*Dod.* 707. 1—*Lob. Obs.* 100. 2, *and Ic.* i. 203. 1—*Ger. Em.* 244. 2—*H. Ox.* iii. 3, *row* 1. 2.

Pods turgid with the whitish seeds; *beak* scored, dark green, with a few hairs, (longer than the pod, and discriminative of the plant. E.) *Stem* twelve to eighteen inches high, strong, hard, nearly cylindrical, branched, set with strong hairs pointing downwards. *Leaves* nearly lyrate, rough with strong hairs, deeply divided, segments three or five, the terminal one very broad, large, toothed, and indented. *Fruit-stalks* set with strong reflexed hairs. *Petals*, limb inversely egg-shaped, yellow. (*Calyx-leaves* linear, green, horizental. Sm. E.)

WHITE MUSTARD. (Welsh: *Cedu dû.* E.) Corn-fields and road sides. A. June—Aug.*

S. NI'GRA. (Pods quadrangular, smooth, laid flat to the stalk: upper leaves linear-lanceolate, entire, smooth. E.)

(*E. Bot.* 969. E.)—*Woodv.* 151—*Blackw.* 446—(*Fl. Dan.* 1582—*Pet.* 45. 11. E.)—*J. B.* ii. 855.

(Three or four feet high. *Lower-leaves* large, lyrate, rough. *Pod* with a very short beak, or rather only the persistent style and stigma at its summit, its surface scarcely rugged. Hook. E.) *Calyx* yellow. *Blossom* pale yellow.

The Rev. Dr. Goodenough in Fl. Brit. remarks that this species may at once be distinguished from its congeners by the leaves of the lesser branches being pendulous. E.)

COMMON MUSTARD. (BLACK MUSTARD. Welsh: *Cedu gwyn.* E.) Corn-fields, ditch banks, and road sides. A. June.†

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* It is sown in winter, or early in spring, and gathered young to supply our tables with salading. (On a warm border or hot-bed, it will be ready for use in about ten days. Columella elegantly denominates this, or the following "*fletum factura Sinapi*," the tear-creating Mustard; and Plautus, on account of its pungency, names it "*scelerata Sinapi*, the wicked Mustard. The seeds, (rather large and yellowish brown), have nearly the same properties as those of the next species, (by their acrimony and pungency stimulating the solids, and attenuating viscid juices; therefore deservedly recommended for exciting appetite, assisting digestion, promoting the fluid secretions, and for the other purposes of the acrid plants called antiscorbutic. But, recently, White Mustard seed has become so fashionable a remedy for restoring impaired constitutions, and strengthening the digestive organs, that its merits have been most unduly blazoned forth not only in every county of England, but on the Continent, where it appears to have succeeded to the medical honours of the Eau de Cologne. Let credulity beware of such idle and specious pretexts, though accompanied by the common place sophism "if it produce no benefit, it will at least do no harm." The use even of White Mustard seed requires judgment and discretion, and it would be well for those who may be advised to try the experiment, previously to refer to Gent. Mag. vol. xcviii. p. 618. E.)

† The seeds, reduced to powder, make the common mustard so much in request as a condiment at our tables. They yield a considerable quantity of expressed oil, which partakes but little of the acrimony of the plant. The seeds, when unbruised, impart but little taste to boiling water. Taken inwardly, in the quantity of a meat spoonful or more, they gently relax the bowels, and are of service in asthma, chronic rheumatism, and palsy. The powdered seeds curdle milk, and give a strong impregnation to boiling water. The infusion taken in considerable quantity, vomits; (thus affording the most ready emetic,

(S. TENUIFO'LIA. Leaves lanceolate, smooth; the lowermost once or twice pinnatifid; uppermost undivided: pods erect, strap-shaped, smooth, with short beaks: stem smooth. E.)

E. Bot. 525—*Curt.*—*Pet.* 468. E.)

Stem one foot and a half high, upright, cylindrical, woody at the base. *Leaves* with winged-clefts and jagged, smooth, expanding, of a disagreeable scent. *Calyx*, two of the leaves almost upright; two gibbous at the ends, bent back; before the blossom is expanded appearing as if tipped with two horns from the projecting points of two of the leaves, which are beset with one or two hairs. *Petals* of the larger size twice as large as the calyx, yellow, with claws. *Style* very short. *Pods* one and a half inch long, cylindrical, marked with a prominent line on each side. *Seeds* egg-shaped, slightly compressed. Curt. (*Root* spindle-shaped, whitish, rather woody. *Stem* very much branched: *herb* glaucous. *Seeds* in two rows,* not always complete. E.)

(NARROW-LEAVED WALL MUSTARD. WILD ROCKET. Ray. WALL ROCKET. Pet. *S. tenuifolia*. Br. Hook. Sm. *Sisymbrium tenuifolium*. Linn. Willd. Fl. Brit. With. Ed. 6. *Brassica muralis*. Huds. With. Ed. iii. Curt. *Diplotaxis tenuifolia*. De Cand. Grev. E.) Old walls and rubbish. Walls of Yarmouth. Mr. Woodward. Chester, Taunton Castle, Lichfield Close, Berwick, &c. Ray; and about London, Bristol, and Exeter. Hudson. London Bridge. Mr. Jones. Near Sunderland, and about Tynemouth castle, abundantly. Mr. Robson. (Carlisle castle and drawdykes; erroneously reported in Hutchinson as *Brassica muralis*. Mr. Winch. Ludlow castle. Rev. T. Rufford, in Purt. Dover cliffs. Mr. G. E. Smith. Coast of Fife, between Burntisland and Queensferry. Dr. Greville. Hook. Scot. E.) July—Oct.†

(S. MURA'LIS. Pods ascending, slightly beaked: leaves spear-shaped, sinuated, deeply serrated: stems spreading, roughish.

B. Bot. 1090—*Burr. Ic.* 131—*H. Ox.* iii. 5. 9.

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when prompt relief of that kind may be requisite: E.) in smaller doses, it is an useful aperient and diuretic. Cataplasms, formed with crumb of bread, vinegar, and powdered mustard seed, (hence called sinapisms), are very commonly applied to the soles of the feet, as stimulants, in fevers that require such treatment; they are used with advantage, topically applied, in fixed rheumatic and sciatic pains. Upon the whole, wherever we want a strong stimulus, that acts upon the nervous system, without exciting much heat, we know none preferable to mustard seed. (The plant is cultivated largely in Essex, and the seed sold to the manufacturers of flower of Mustard. It is prepared by drying the seeds on a kiln, and grinding them into powder. Mr. Salisbury states that in the Isle of Ely, wherever new ditches are thrown out, or the earth dug to any unusual depth, a crop of Black Mustard immediately appears; the seeds in some instances having remained under ground for ages. See *Osmunda regalis*. With. vol. iii. E.) Its acrimony consists in an essential oil.—*Phalæna fuliginosa* lives upon the different species: (and the caterpillar of *Pontia Daplidice* devours the seeds. Vid. Curt. Brit. Ent. vol. i. pl. 48.—*Multvm ardet* in Latin, or *Moult arde* in old French, (" it burns much,") might have been imagined the real *thema* of the word *Mustard*, had not a whimsical history attached to its etymology. In 1382 Philip the Bold, Duke of Burgundy, granted to the town of Dijon armorial ensigns with the motto "*Moult me tarde*," (" I long, or wish ardently;") which, being sculptured over the principal gate, by some accident the middle word became effaced. The merchant dealers in *Senêve*, (*Sinapi*), intending to ensign their pots with labels of the city arms, copied the imperfect motto as it then remained, "*Moult-tarde*," and hence the name which the Sinapi composition has preserved to this day. E.)

* (Whence Prof. De Candolle deduces his genus *Diplotaxis*. E.)

† All the parts of this plant are considerably acrid, and have a rank disagreeable smell.

Root tapering. *Stems* branching, leafy, cylindrical, covered with reflexed hairs; sometimes very short. *Leaves* alternate, on leaf-stalks, broad-spear-shaped, unequally waved and serrated, smooth, and of a lightish green, not glaucous. *Fruit-stalks* terminal, very long, forming a bunch-like corymbus, greatly elongated with flowering. *Blossoms* yellow, only half the size of those of *S. tenuifolia*. *Calyx* a little hairy. *Pod* slender. *Fruit-stalks*, and *pedicles* often rather hairy. *Seeds* two-ranked, but still less accurately so than in the preceding. *Calyx* in both spreads less than the characters of *Sinapis* requires. Sm. E.)

(Sand Mustard. E.) Sand Rocket. (*S. muralis*. Br. Sm. *Sisymbrium muralis*. Br. Sm. *S. murale*. Linn. With. Willd. Fl. Brit. Among rubbish, and the sands of the sea shore. Common throughout the Isle of Thanet, particularly about Ramsgate. Plentiful about Swansea. Mr. Dillwyn. St. Vincent's Rocks, &c. below Bristol. Mr. Edward Forster. Bot. Guide. St. Anthony's Ballast Hills, Northumberland. Mr. Winch. A. Aug.—Sept.*

RAPH'ANUS.† *Cal.* close, upright: *Nect. glands* two between the shorter stamens and the pistil, and two between the shorter stamens and the calyx: *Pod* cylindrical, but protuberating, with cells, and imperfectly jointed.

R. **raphanis'trum.** (Pods jointed, striated, one-celled: leaves simply lyrate. E.)

Curt. 267—(*E. Bot.* 856. E.)—*Linn. Amœn. Acad.* vi. 451—*Fl. Dan.* 678—*J. B.* ii. 851. 1—*Ger.* 179. 2—*Lob. Ic.* i. 199. 1—*Ger.* 240. 1—*Pet.* 46. 10—*Ger.* 199—*Park.* 863. 4—*H. Ox.* iii. 13. 1 *and* 2—*Park.* 863. 5—*H. Ox.* iii. 13, *row* 2. 4. *f.* 4.

Stem one to two feet high, rough with transparent reflexed hairs. *Leaves* sometimes rough with hairs; the *lower* lyre-shaped, wings alternate, heart-oblong, serrated, the lowermost very small, the odd one large, rounded at the end, scolloped; the *upper* oblong-spear-shaped, scollop-serrated. *Leaf-stalks* generally rough. *Calyx* beset with white hairs, except the base which is smooth. *Blossom* generally yellow, but occasionally white, or violet, with dark veins. *Pod*, joints falling off separately. Linn. *Plant* generally of a sea-green cast. *Petals* of whatever colour, veined with dark lines. Woodw. (*Seeds* large, solitary in each joint. *Pod*, with its beak, an inch and a half long. E.)

(Var. 2. Radical leaves interruptedly lyrate; all the leaves rough, and rather sharply toothed. Blossom more yellow, and less veiny than in the preceding. Root large and succulent, conjectured to be biennial, or sometimes triennial. Always grows near the sea. E. Bot. (The chief difference seems to consist in its larger size, its leaves being less simply lyrate, and more serrated, and the pods perhaps more strongly furrowed;

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* (This weed, which has now over-run the whole arable land of the Isle of Thanet, was first remarked some twenty years ago near to the beach at Broad-stairs, and is believed to have been introduced on that spot by a corn-laden vessel wrecked on that part of the coast.—It will be observed that the other stations of this plant might induce a similar suspicion as to its origin in Britain. E.)

† (From ραφανος, a root: as preeminent, probably alluding to *R. sativus*, the kind generally cultivated. E.)

but it will not be denied that the same characteristics exist, in a somewhat less degree, in the more ordinary appearance of the species. E.)

Sea Radish. *R. maritimus.* Sm. Br. Hook. De Cand. E. Bot. 1643. *R. Raphanistrum* γ. Fl. Brit. On the beach three miles from the Mull of Galloway. Mr. J. Mackay. Isle of Bute, so long ago as 1753, by the late Rev. Dr. Walker, Professor of Natural History at Edinburgh, who cultivated it as an esculent root preferable to Horse Radish, and found cattle to be fond of the herbage. Rocks near Beachy Head, Sussex. Messrs. Turner and Borrer. About the Lizard. Rev. J. P. Jones. E.)

WILD RADISH. JOINTED CHARLOCK. (Irish: *Praisseagh Garuh.* Welsh: *Rhuddygl, neu Heddig gwyllt.* E.) Amongst corn. A. June—July.*

(*A Synoptical View of* MR. BROWN'S *Arrangement of the Species comprehended in the Class* TETRADYNAMIA.)

SILICULOSA.

CAKI'LE MARIT'IMA. (*Bunias Cakile.*) *Joints* of the *pouch* two-edged; upper one arrow-shaped: *leaves* wing-cleft, slightly toothed, fleshy.

CRAM'BE MARIT'IMA. (*C. maritima.*) The four longer *filaments* forked: *pouch* pointless: *leaves* roundish, indented, waved, toothed, glaucous, and smooth, as is the *stem.*

CORO'NOPUS RUEL'LII. (*Cochlearia coronopus.*) *Pouch* entire, crested with sharp points.

———— DID'YMA. (*Lepidium didymum.*) *Pouch* notched at the end, doubled, wrinkled: *leaves* wing-cleft: *segments* strap-spear-shaped, undivided or snipt.

I'SATIS TINCTO'RIA. (*I. tinctoria.*) *Pouch* inversely egg-oblong, smooth; *stem-leaves* arrow-shaped, smooth.

VEL'LA AN'NUA. (*V. annua.*) *Leaves* with winged clefts: *pouches* hanging down.

THLAS'PI ARVEN'SE. (*T. arvense.*) *Pouch* round and flat, its wings dilated longitudinally: *seeds* concentrically scored: *leaves* oblong, arrow-shaped, toothed, smooth.

BURSA-PASTO'RIS. (*T. bursa-pastoris.*) *Pouch* inversely-heart-shaped, without wings: *root-leaves* wing-cleft.

PERFOLIA'TUM. (*T. perfoliatum.*) *Pouch* inversely-heart-shaped, winged: *style* enclosed, very short: *stem-leaves* heart-shaped, slightly toothed, smooth.

ALPES'TRE. (*T. alpestre.*) *Pouch* inversely-egg-shaped, bluntly notched at the end: *cells* four to six-seeded: *style* protruding: *stamens* as long as the petals: *stem-leaves* heart-arrow-shaped: *stem* undivided.

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* In wet seasons it grows in great quantity among the barley in Sweden, and then those who eat barley bread are afflicted with violent convulsive complaints. *Amœn. Acad.* vi. 430.—Horses eat it. Cows refuse it.

HUTCHINS'IA PETRÆ'A. (*Lepidium petræum.*) *Leaves* winged, very entire: *petals* scarcely longer than the calyx: *pouch* on both sides blunt: *stigma* sessile.

TEESDA'LIA NUDICAU'LIS. (*Iberis nudicaulis.*)

I'BERIS AMA'RA. (*I. amara.*) Herbaceous: *leaves* spear-shaped, rather sharp-pointed, slightly toothed, smooth: *flowers* in bunches.

LEPIDI'UM LATIFO'LIUM. (*L. latifolium.*) *Leaves* spear-shaped, undivided, serrated, or entire: *pouch* oval, entire.

——— RUDERA'LE. (*L. ruderale.*) *Flowers* diandrous, without petals: *root-leaves* wing-cleft; *those* of the *branches* strap-shaped, entire: *pouch* notched at the end, expanding.

CAMPES'TRE. (*Thlaspi campestre.*) *Pouch* egg-shaped, notched at the end, winged: *stem-leaves* arrow-shaped, toothed.

COCHLEA'RIA OFFICINA'LIS. (*C. officinalis.*) *Pouch* nearly globular: *root-leaves* kidney-shaped.

——— AN'GLICA. (*C. Anglica.*) *Pouch* elliptical: *root-leaves* egg-shaped, entire.

DAN'ICA. (*C. Danica.*) *Pouch* elliptical: all the *leaves* deltoid.

—— ARMORA'CIA. (*C. Armoracia.*) *Pouch* oblong, summit dilated, nearly sessile: *root-leaves* oblong, scollopped; *those* of the *stem* long-spear-shaped, toothed or snipt.

SUBULA'RIA AQUAT'ICA. (*S. aquatica.*)

DRA'BA VER'NA. (*D. verna.*) *Flower-stalk* naked: *petals* deeply divided into two parts: *leaves* spear-shaped, slightly snipt, hirsute.

——— RUPES'TRIS. (*D. hirta.*) *Flower-stalk* naked, or with one leaf: *petals* undivided: *pouch* spear-shaped, pubescent: *leaves* flat, spear-shaped, hairy.

——— INCA'NA. (*D. incana.*) *Stem-leaves* numerous, hoary, slightly toothed: *pouch* oblong, smooth, twisted.

——— MURA'LIS. (*D. muralis.*) *Stem* branched: *leaves* egg-shaped, embracing the stem, toothed: *pouch* expanding, smooth.

——— AIZOI'DES. (*D. aizoides.*) *Flower-stalk* naked, smooth: *leaves* spear-strap-shaped, rigid, keeled, fringed: *stamens* as long as the petals: *style* half the length of the germen.

CAMELI'NA SATI'VA. (*Myagrum sativum.*) *Pouch* inversely egg-shaped, bordered: *summit* undivided: *leaves* spear-arrow-shaped.

ALYS'SUM MARIT'IMUM. (*A. halimifolium.*) *Pouch* entire, smooth: *cells* many-seeded: filaments without teeth: *leaves* strap-spear-shaped, sharp-pointed, slightly hoary: *hairs* divided, laid flat.

SILIQUOSA.

CARDAM'INE BULBIF'ERA. (*Dentaria bulbifera.*) *Stem* strictly undivided: *lower-leaves* winged: *upper* ones simple.

Cardam′ine ama′ra. (*C. amara.*) *Leaves* winged: radical leaflets roundish: those of the stem tooth-angular: *style* oblique: *summit* tapering to a point: *stem* radicating at the base.

praten′sis. (*C. pratensis.*) *Leaves* winged: radical leaflets roundish; those of the stem spear-shaped: *style* straight: *summit* capitate.

——— **impa′tiens.** (*C. impatiens.*) *Leaves* winged: leaflets spear-shaped, somewhat snipt: *stipulæ* fringed: *petals* strap-shaped, or none.

hirsu′ta. (*C. hirsuta.*) All the *leaves* winged, without stipulæ: leaflets having leaf-stalks: the radical ones roundish: stamens four to six, as long as the petals: *summit* nearly sessile.

A′rabis stric′ta. (*A. stricta.*) *Leaves* toothed, blunt, rough with bristly hairs; those of the root approaching to lyre-shaped: *stems* hirsute: *petals* erect.

——— **his′pida.** (*A. hispida.*) *Root-leaves* indented, lyre-shaped, lengthened into foot-stalks; *those* of the *stem* mostly undivided, smooth: fruit-bearing *peduncles* spreading half the length of the pods.

——— **thalia′na.** (*A. thaliana.*) *Leaves* toothed, hairy; those of the root oblong: *stamens* nearly as long as the petals: *pods* ascending.

——— **cilia′ta.** (*Turritis alpina.*) *Leaves* slightly toothed, oval, smooth, fringed: those of the root nearly sessile, blunt: *stem-leaves* half embracing the stem, which is undivided.

——— **hirsu′ta.** (*T. hirsuta.*) All the *leaves* rough with bristly hairs, toothed: stem-leaves half embracing the stem: *pods* straight.

——— **turri′ta.** (*A. turrita.*) *Leaves* embracing the stem, acuminate: *pods* pendant, two-edged: *bracteæ* leafy.

Turri′tis gla′bra. (*T. glabra.*) *Root-leaves* toothed, hairy: *stem-leaves* embracing the stem, entire, smooth.

Barba′rea vulga′ris. (*Erysimum barbarea.*) *Lower-leaves* lyre-shaped, red; the terminating lobe rounded: *upper-leaves* inversely-egg-shaped, toothed.

——— **præ′cox.** (*E. præcox.*) *Lower-leaves* lyre-shaped: *upper-leaves* wing-cleft: segments strap-oblong, entire.

Nastur′tium officina′le. (*Sisymbrium Nasturtium.*) *Leaves* winged: leaflets egg-shaped, somewhat heart-shaped, waved.

——— **sylves′tre.** (*S. sylvestre.*) *Leaves* winged: leaflets spear-shaped, serrated or snipt.

ter′restre. (*S. palustre, v. terrestre.*) *Leaves* wing-cleft, toothed, smooth: *root* spindle-shaped: *petals* not exceeding the calyx.

amphib′ium. (*S. amphibium.*) *Leaves* oblong-spear-shaped, wing-cleft or serrated: *petals* longer than the calyx: *root* fibrous.

Sisym'brium officina'le. (*Erysimum officinale.*) *Pods* awl-shaped, pubescent, pressed to the stalk: *leaves* notched, hairy: *stem* hispid.

——— I'rio. (*S. Irio.*) *Leaves* notched, toothed, and, as is the stem, smooth: *pod* expanding upwards.

So'phia. (*S. Sophia.*) *Leaves* doubly winged: leaflets strap-shaped, the terminal one longest: *petals* shorter than the calyx.

Erys'imum cheiranthoi'des. (*E. cheiranthoides.*) *Leaves* spear-shaped, entire, or slightly toothed: hairs triply stellate: *pods* nearly upright: *fruit-stalks* expanding: *summit* undivided, nearly sessile.

——— Allia'ria. (*E. alliaria.*) *Leaves* heart-shaped, on leaf-stalks, sharply toothed.

orienta'le. (*Brassica orientalis.*) *Leaves* heart-shaped, embracing the stem, smooth: *root-leaves* scabrous, entire.

Cheiran'thus chei'ri. (*C. cheiri.*) *Leaves* spear-shaped, entire: pubescence adpressed: *pod* strap-shaped: *lobes* of the *summit* recurved.

Mathi'ola inca'na. (*Cheiranthus incanus.*) *Leaves* spear-shaped, entire; *pods* cylindrical, without glands.

——— sinua'ta. (*C. sinuatus.*) *Leaves* cottony; the lower ones indented: *pods* compressed, prickly.

Hes'peris matrona'lis. (*H. matronalis.*) Borders of the *petals* inversely egg-shaped: *pods* upright, protuberating, with a simple margin.

Bras'sica na'pus. (*B. napus.*) *Root* caulescent, spindle-shaped: *leaves* smooth; the upper ones heart-spear-shaped, embracing the stem; lower ones lyre-shaped, toothed.

ra'pa. (*B. rapa.*) *Root* caulescent, orbicular, flatted, fleshy: *root-leaves* lyre-shaped, scabrous: *those* of the *stem* entire, smooth.

—— olera'cea. (*B. oleracea.*) *Root* caulescent, cylindrical, fleshy: all the *leaves* smooth, glaucous, waved, and lobed.

—— monen'sis. (*Sisymbrium monense.*) *Leaves* wing-cleft: *stem* nearly leafless, glabrous: *pods* smooth: *beak* one-seeded.

campes'tris. (*B. campestris.*) *Root* and *stem* slender: *leaves* heart-shaped, embracing the stem; lower ones lyre-shaped, toothed, rather hispid.

Sina'pis arven'sis. (*S. arvensis.*) *Pods* with many angles, turgid, and protuberating, longer than the two-edged beak.

——— al'ba. (*S. alba.*) *Pods* hispid: *beak* slanting, very long, sword-shaped.

SINA'PIS NI'GRA. (*S. nigra.*) *Pods* pressed to, smooth, quadrangular: style oval-shaped.

——— TENUIFO'LIA. (*Sisymbrium tenuifolium.*) *Pods* strap-shaped, smooth, upright: *beak* very short: *fruit-stalks* expanding: leaves spear-shaped, acuminate, pointed, winged or doubly winged: *stem* smooth.

——— MURA'LIS. (*S. murale.*) *Pods* strap-shaped, smooth, nearly upright: *beak* very short: *fruit-stalks* expanding: *leaves* indented, smooth: *stem* expanding, hairy.

RAPH'ANUS RAPHANIS'TRUM. (*R. raphanistrum.*) *Leaves* simply lyre-shaped: *pods* of one cell, jointed, scored.

——— (*R. maritimus.* E. Bot.) *Leaves* interruptedly lyre-shaped: *pods* of one cell, jointed, scored. E.)

CLASS XVI.

MONADELPHIA.

TRIANDRIA.

JUNIP'ERUS. B. and F. flowers on different plants.
B. *Cal.* a catkin: *Bloss.* none.
F. *Cal.* with three divisions: *Bloss.* three petals: *Styles* three: *Berry* beneath, three-seeded, the calyx remaining at the base.

PENTANDRIA.

(ERO'DIUM. *Style* one: *Fruit* beaked, of five aggregate *capsules*, each terminated by a spiral *awn*, bearded on the inside. E.)

DECANDRIA.

GERA'NIUM. (*Style* one: *Fruit* beaked, of five aggregate *capsules*, each terminated by a recurved, naked *awn*. E.)

[Spartium. Genista. Anthyllis. Ulex. Ononis. Oxalis.]

POLYANDRIA.

(1) *Pistil one.*

TAX'US. B. and F. flowers on different plants: *Cal.* four-leaved: *Bloss.* none.
B. *Anthers* eight-cleft.
F. *Summit* one: *Berry* one-seeded: *Seed*, upper half naked.

(2) *Pistils two.*

PI'NUS. B. and F. flowers on the same plant: *Bloss.* none.
B. *Cal.* four-leaved.
F. A cone-like *Catkin*: *Nuts* two, with a membranous wing.

(3) *Pistils many.*

LAVATE'RA. *Outer Calyx* three-cleft: *Seed-coats* in whorls: one seed in each.

MAL'VA. *Outer Calyx* three-leaved: *Seed-coats* several, whorled, one seed in each.

ALTHÆ'A. *Outer Calyx* nine-cleft: *Seed-coats* several whorled, one seed in each.

TRIANDRIA.

JUNIP'ERUS. B. and F. flowers distinct.
B. *Cal.* scales of the catkin: *Bloss.* none.
F. (*Cal.* scales of the catkin, fewer, becoming fleshy, united into a *berry* with three *seeds*: E.) *Petals* three: *Pistils* three.

J. COMMU'NIS. Leaves ternate, expanding, mucronate; longer than the berry.

Fl. Ross. i. 54—*Fl. Dan.* 1119—(*E. Bot.* 1100. E)—*Ludw.* 189—*Mill. Ill.*—*Blackw.* 187—*Sheldr.* 70—*Woodv.* 95—*Kniph.* 1—*Gars.* 88—*Tourn.* 361. 2—*Matth.* 121—*Ger.* 1189. 1—*Fuchs.* 88—*J. B.* i. *b.* 293—*Trag.* 1071—*Lonic.* i. 24—*Cam. Epit.* 53—*Dod.* 852—*Lob. Obs.* 628. 2, *and Ic.* ii. 222. 2—*Ger. Em.* 1372. 1—*Park.* 1029. 1.

(Usually a low shrub, much branched, rigid, smooth, evergreen: in favourable situations attaining a height of fifteen feet or more. *Juice* of the whole plant resinous. *Leaves* sessile, channelled, very entire, sharp-pointed and prickly, glaucous on the upper surface. *Seeds* three, angular. Fl. Brit. E.) *Anthers* under the lateral scales often five. Leers. *Berry* continuing two years; green, at length blackish purple. Relh. *Bark* reddish. *Flowers* small, in axillary catkins.

COMMON JUNIPER. (Irish: *Beeora Leacra; Whar Greige.* Welsh: *Meryven gyffredin.* Gaelic: *An-t'aiteal.* Erse: (in Arran) *Beeora Leacra.* E.) (Sandy heaths, and open hilly spots on calcareous soil. E.) Near Berkhamstead, Hertfordshire, and abundantly on a common between Blenheim and Ditchley, Oxfordshire. Mr. Woodward. On heaths, west of Bishop's Aukland. Mr. Robson. (Juniper Hill between Middletonstoney and Oxford. Rev. Dr. Abbot in E. Bot. On Lanchester Moor, &c. and near Castle Eden, Durham. Winch Guide. Cleve Hill; and Cracombe Hill, Worcestershire. Purton. Near Stye-head, Cumberland. Mr. Wood. Cefn y Ferywen, (Juniper bank,) Llanidan parish, Anglesey. Welsh Bot. Abundant on the Pentland Hills. Dr. Greville. On the edges of Shakspeare's Cliff, and other high precipices overhanging the sea between Dover and Folkstone. E.) S. May.*

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* Juniper may be found either in fertile or barren soils; on hills or in valleys: in open sandy plains, or in moist and close woods. On the sides of hills its trunk grows long; but on the tops of rocky mountains and on bogs it is little more than a shrub. Linn.—(" A great deal of it grows by the side of the road, between the General's Hut and Inverness, and indeed many of the neighbouring hills are almost covered with it: a ship load of the berries used annually to be sent from hence to Holland." Garnett's Tour. E.) —It is easily transplanted, and bears cropping. Grass will not grow beneath it, but *Avena pratensis* destroys it. The wood is hard and durable, (red, and employed for veneering. E.) The bark may be made into ropes. The berries are two years in ripening. When bruised, they afford a pleasant diuretic liquor, but it is not easy to prevent its becoming sour. It is esteemed a good antiscorbutic, and affords occasional relief in nephritic complaints. The Swedes prepare an extract from the berries which is sometimes eaten for breakfast, but it is fitter for a medicine than for food. The spirit impregnated with the essential oil of these berries is every where known by the name of Gin, or Juniper water. (Gin, (contracted from Geneva, and that a corruption of *genevre*, French for a Juniper berry, primarily originating in the gallantry of Ariosto, who thus commemorated the name of his favourite fair, and in the same spirit was induced to prefer this humble shrub even before the laurel and the bay:

> " Quell' arboscel, che in le solinghe rive
> A l'aria spiega i rami orridi ed irti,
> Ed' odor vince i pin', gli abeti, ei mirti,
> E lieto e verde al caldo, e al ghiaccio vive.
> Il nome ha di colei, che mi prescrive
> Termine e leggi a' travagliati spirti
> Da cui seguir non potran Scille o Sirti;
> Ritrarmi, o le brumali ore, o lo estive;)"

is properly a malt liquor, distilled a second time, with the addition of Juniper berries. Formerly the berries were added to the malt in grinding; but latterly they are omitted entirely, and the spirits are distilled with oil of Turpentine to give them a flavour, which, though it nearly resembles that of Juniper berries, has none of their valuable virtues, so that this deleterious compound,

> " Brew'd in hell's black pandemonia,"

too often proves a deadly potion to the drunkard; polluting both soul and body. In countries where Juniper abounds, (Brookes records the practice as still prevalent in Norway and Sweden), the sprays are preferred, on account of the agreeable odour they diffuse when trodden under foot, for strewing over the floors of apartments; and are also supposed to promote sleep. Boccacio alludes to such a custom as essential to paradisiacal enjoyment; and in former ages, though rushes were commonly thus used throughout England, the Juniper was reserved as a luxury for high festivals, or the more opulent. Nevertheless Virgil warns us against trusting to the seductive influence of the

> " *Juniperi* gravis umbra; "
> —— " *Juniper's* sweet shade, whose leaves around
> Fragrance diffuse, at eve are noxious found." Ecl. x. E.)

The berries sometimes appear in a monstrous or distorted form, the leaves of the calyx grow double the usual size; approaching, but not closing; and the three petals fit exactly close, so as to keep the air from the *Tipulæ Junipera*, which inhabit them. (De Geer describes this singular excrescence as resembling a flower, and also attributes it to the operation of *Cecidomyiæ* or *Tipulæ*. E.) Gum Sandarach, more commonly called *Pounce*, for rubbing on paper to prevent the ink sinking through, is the product of this tree. Horses, sheep, and goats eat it. (Thrushes and grous feed on the berries. E.) *Cimex*

Var. 2. Leaves broader and thicker. Berries longer, more oval than spherical. (Stems more depressed. E.)

J. B. i. *b.* 302. 1—*Clus.* i. 38. 2—*Ger. Em.* 1372. 3.

(*Dwarf Alpine Juniper. J. communis β.* Lightf. Fl. Brit. γ. Linn. *J. nana.* Willd. Sm. E.) On the summit of Snowdon, and the mountains of Westmoreland. On Kendal Fell. Ray. About 200 yards south-west of Llyn y Cwn, Carnarvonshire. Mr. Griffith.

PENTANDRIA.

(ERO'DIUM.* Monogynous: the five perfect *stamens* alternating with five imperfect filaments: *Fruit* beaked, separating into five monospermous *capsules*, each with a spiral *awn*, bearded on the inside. E.)

E. **cicutar'ium.** Flowers in umbels: leafits sessile, wing-cleft, blunt: petals entire: (stems procumbent. E.)

Curt.—*Fl. Dan.* 986—*Kniph.* 11—*E. Bot.* 1768—*Fuchs.* 204—*J. B.* iii. 479—*Dod.* 64. 1—*Lob. Ic.* 659. 1—*Ger. Em.* 945. 3—*Pet.* 65. 3—*H. Ox.* v. 15. 9—*Ger.* 800. 3 *and* 4—*Cam. Epit.* 601—*Riv. Irr. Pent. G. Robertianum.*

(Whole *plant* more or less hairy, slightly viscid, scented. *Stems* several, often reddish, spreading, six or eight inches long. E.) *Leafits* more deeply cut in the summer than in the spring. *Blossom* varying much in size even on the same plant. *Petals* the two shorter ones sometimes spotted, or only one, or neither.

The various appearances of this plant at different seasons and soils, and its resemblance in many respects to starved specimens of *E. moschatum*, have occasioned many errors. The spots on the petals are not to be trusted, neither are the incisions of the leafits. The musk odour of *E. moschatum* is the most obvious distinction In *E. cicutarium* the leafits are in general more deeply and more finely cut, and shoulder up close to the midrib with hardly any appearance of a leaf-stalk, but in *E. moschatum* the leaf-stalks to some of the leafits are sufficiently obvious, and in the larger specimens the edges of the leafits are little more than serrated. *Flowers* rose red.

Var. 2. *Fine-leaved.* Leafits wing-cleft, segments strap-shaped.

Juniperinus, *Thrips Juniperina*, and *Coccinella novem-punctata* feed upon it. (Sir John Pringle entitles it a resinous and antiseptic vegetable, and recommends the burning the wood or berries of it, for the purpose of purifying the air in hospitals and other sick apartments. A simple watery infusion is a very useful drink for hydropic patients. In Germany the berries are bruised in sauce used for wild boar or pork. The Laplanders drink infusions of Juniper berries as we do tea. Charcoal made from the wood continues alive very long. The wood when burnt exhibits a fragrant odour-like incense, (properly the gummy exudation of the *Acacia vera*, and called *Thus* from an Egyptian harbour, whence exported, but is likewise commonly prepared from the resin of the Norway spruce fir, and probably as good a substitute might be obtained from the Juniper. E.)

* (From ερωδιος, a heron or stork; the seed having a long beak. E.)

G. *Pimpinellifolium.* Ray. With. Ed. ii. Sandy heaths and corn-fields, Suffolk, frequent. Mr. Woodward.

Both this and the preceding have five glands of a dark colour on the outside the base of the anther-bearing filaments.

Var. 3. *Hoary.* Flowers larger. Blossom white. Stems thicker. Leaves not so finely cut. Ray. Leaves covered with white hairs. Woodw.

Near Camberwell. Ray. Sea banks near Wemys, Fifeshire. Lightfoot. On Yarmouth Denes plentifully, and elsewhere within the distance of a few miles from the sea. Mr. Woodward. (Abundant about Tynemouth. Mr. Winch. E.) St. Vincent's Rocks, Bristol.

(HEMLOCK-LEAVED STORK'S-BILL. *E. cicutarium.* Sm. Willd. De Cand. Hook. Grev. *Geranium cicutarium.* Linn. Huds. Lightf. With. Curt. Oed. E.) In waste ground, sandy soil, on walls and rubbish. A. April—Oct.*

E. MOSCHA'TUM. Flowers in umbels: leafits mostly on short leaf-stalks, unequally cut, (elliptical: stems prostrate. E.)

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* (Several species have been highly extolled for stopping profluvia, and hemorrhages. It is undoubtedly a valuable remedy among poor people in the country, and worthy of being introduced in the shops. Encyc. Brit. E.) Among the numberless instances of obvious Providential design and contrivance in the structure of the seeds and seed-vessels of plants, few are, perhaps, more remarkable, or more strikingly display themselves as the workmanship of an intelligent artificer, than that which we meet with in the seeds of *Erodium cicutarium, moschatum,* and some species of *Geranium.* The seeds of this genus surround the pistil at its base; each seed it covered with a distinct seed-coat peculiar to itself, which, after having inclosed the seed, runs out in the form of a narrow appendage or tail to the extremity of the style, to which it is slightly connected along its whole length, and which has five grooves or flutes to receive the five seeds with their appendages. Each of these appendages has the property of contracting itself into a spiral or screw-like form, when dry; and of again extending itself into a right line, when moist. In short, it is a spiral spring, which lengthens or contracts itself alternately, as often and in such proportion, as it happens to become wet or dry. The power firsts exerts itself when the seed and its appendage becomes dry, in consequence of arriving at maturity; when it gradually separates the seed from its parent plant. The seed, thus disengaged, is continually contracting and dilating itself, as the weather changes from wet to dry, and from dry to wet; and by this means is kept in motion, till it is either destroyed by the vicissitudes of the seasons, or meets with some crevice in the earth, or some light porous spot, into which it can insinuate itself, and from thence, in due time, produce a new plant. The minutiæ of the mechanical structure and operations of this curious seed will be better understood by inspection, than by the most laboured description; and all its manœuvres may be seen in a short space of time, by alternately moistening and drying it; which may be readily done, by putting a little water on the edge of a white stone or china plate, and removing it by turns from the dry to the moist, and from the moist to the dry part of the plate; or the changes may still more quickly be produced, by removing it from the wet to a fresh place, and drying it before a fire. I mention a white plate, because on that, the fine hairs which display themselves from the sides of the tail, as that contracts, and which act as fulcra, or feet, to assist and direct the seed in its motions, are most easily distinguishable. Dr. Arnold. (And thus does the admirable adaptation exhibited by the various phenomena of the vegetable kingdom appear almost to approximate the principle denominated instinct in the animal creation, preserving a consistent gradation, and manifesting a superintendant care from the highest to the lowest order of created being. In truth

———— "There lives and works
A soul in all things, and that soul is God." E.)

Riv. Pent. 112. *G. mosch.*—(*E. Bot.* 902. E.)—*Jacq. Hort.* i. 55—*Blackw.* 150—*Matth.* 856—*Dod.* 63. 1—*Lob. Obs.* 376. 1, *and Ic.* i. 658. 2—*Ger. Em.* 941—*Park.* 709. 1—*Pet.* 65. 2—*H. Ox.* v. 15. 10—*Ger.* 796—*Trag.* 3[illegible]7.

Very like *E. cicutarium*; of an ambrosial scent. Linn. Whole *plant* more hairy than *E. cicutarium*; *hairs* viscid, particularly those of the calyx. *Flowers* more numerous, forming a roundish head. *Pedicles* shorter. *Leaves wings* fewer, egg-shaped, sometimes only serrated, or jagged, rarely wing-cleft. Woodw. *Stems* swoln and crooked at the joints. *Leafits* opposite and alternate, the terminal one three-cleft. *Fruit-stalks* with from four to ten flowers, as the *calyx*, thickly set with fine white hairs, ending in pellucid globules. *Leaves* unequal, ribbed, ending in fine points. *Petals* with three fibres. *Seed-coat* with strong yellow hairs. *Blossom* red or purple. *Glands* five, on the outside of the anther-bearing filaments, green.

(MUSKY STORK'S-BILL. Welsh: *Pig y Crëyr mwsgaidd.* *E. moschatum.* Willd. De Cand. Sm. Grev. *Geranium moschatum.* Linn. Huds. With. Jacq. E.) Near Battersea; and between Bristol and St. Vincent's Rocks. Ray. Near Stourbridge. Stokes. Hornsey, Yorkshire; and Faringdon, Somersetshire Mr. Baker. At Teignmouth. (On Ampthill Warren, Bedfordshire. Rev. Dr. Abbot. By the side of the post road between the second and third mile-stones from Holyhead. Welsh Bot. Near Preston-pans. Dr. Graham. Grev. Edin. E.) A. May—Oct.

(E. MARIT'IMUM. Stems trailing: leaves heart-egg-shaped, scolloped, cut, rough: fruit-stalks one to three-flowered.

Dicks. H. S.—(*E. Bot.* 646. E.)—*Pluk.* 31. 4—*Pet.* 65. 1—*H. Ox.* v. 35. *row.* 3. *f.* 2.

Stems branched, lying close to the ground, three to nine inches long. *Root-leaves* on long stalks, spreading in a circle on the ground, hairy, variously cut and jagged, sometimes nearly lobed; *stem-leaves* similar. *Fruit-stalks* shorter than the leaves, compressed. *Beaks* very small, not exceeding half an inch in length. *Leaf-stalks* much longer than the leaves. *Filaments* spear-shaped. *Anthers* purple. *Summits* greenish-yellow. *Blossoms* pale red, small, one or more *petals* often wanting.

SEA STORK'S-BILL. (Welsh: *Pig y Crëyr arfor.* *E. maritimum.* Sm. Willd. De Cand. *Geranium maritimum.* Linn. Huds. With. Dicks. Sandy sea shores, common. Shores of the Isle of Man. Mr. Robson. On the Point, Beaumaris, and about Penmon. Welsh Bot. Acle, Norfolk. Mr. Crowe. Rocks at Portawen, Cornwall. Mr. Watt. Sandy commons between Enville and Bewdley, Worcestershire, always in a south aspect. Mr. Hunter. Leigh Down, near Bristol. Rev. G. Swayne. Sea coast Teignmouth, with flowers from two to four on each fruit-stalk. (Among St. Vincent's Rocks, below the sea-walls, and in other parts; single-flowered; leaves with five or six pairs of leafits. E.) P. June—Oct.

DECANDRIA.

GERA'NIUM.* (Monogynous : *Fruit* beaked, separating into five monospermous *capsules*, each with a long, naked, simple *awn*, (neither spiral nor bearded. E.)

(1) *Blossoms regular; fruit-stalks single-flowered.*

G. **SANGUIN'EUM.** (Stalks single-flowered: leaves roundish, in five or seven deeply serrated trifid lobes. E.)

(*Hook. Fl. Lond.* 155—*Fl. Dan.* 1107. E.)—*E. Bot.* 272—*Kniph.* 7—*Walc.* —*Clus.* ii. 102. 1—*Lob. Ic.* i. 660. 1—*Ger. Em.* 945. 2—*Pet.* 64. 9—*Fuchs.* 209—*J. B.* iii. 478. 2—*Lonic.* i. 152. 2—*Trag.* 348—*Park. Par.* 227. 6.

Stem hairy, from a foot to a cubit high. *Leaves* above rough, hairy underneath and on the edge. *Fruit-stalks* three inches long, hairy, with a knot and two floral-leaves about the middle. Relh. *Calyx* leaves oval, with membranous reddish edges, and terminated by a short red awn. *Petals* inversely heart-shaped, very large, equal, pale red, with deep red veins. Woodw. Whole *plant* set with white expanding hairs. *Leaves* opposite. *Petals* hairy at the base. (*Capsules* even, bristly at the summit. *Seeds* minutely wrinkled. Sm. The circumstance of the stem being upright or trailing in these species, affords no certain characteristic. E.)

BLOODY CRANE'S-BILL. (Welsh: *Pig yr Aran rhuddgoch.* E.) Limestone rocks, stony places, dry pastures, heaths, and thickets, in mountainous situations. Arthur's Seat, Edinburgh. Lightfoot. Rocks near the sea, Cornwall. Mr. Watt. Near Buxton, Derbyshire, and Roosebeck in Low Furness, Lancashire. On a heath near Woodbridge, Suffolk. Mr. Woodward. (Sand hills, North Shore, near Liverpool. Dr. Bostock. Lower part of Castle Eden Dean, Durham. Mr. Winch. Abundant in Anglesey, just above the sea. Welsh Bot. E.) St. Vincent's Rocks, (and about Brislington, E.) Bristol. On the left side the lower road from Cheltenham to Gloucester, two miles from the former place. P. July—Sept.

Var. 2. Leaves larger, paler, and more deeply divided. Ray.

Pet. 64. 10.

Banks of the Devil's Ditch, Newmarket, Relhan ; and the left side of Dallingham Gap going from Canvas Hall, Cambridgeshire. Ray.

(Var. 3. All the parts of the plant evidently smaller ; leaves strikingly more compact and star-like ; peduncles much less hairy. Stem either trailing or upright. This plant preserves its peculiar appearance in gardens, as proved by Mr. Sole at Bath, and also by Mr. Curtis, who therefore judged it distinct, as did Ray. E.)

Dill. Elth. 136—*Pet.* 64. 11.

Flowers white, with reddish veins. Ray. The figure of Dillenius too large. Woodw. Grows intermixed with *G. sanguineum* in the Isle of Walney, but the flower and every part of the plant is a third smaller. Mr. Atkinson.

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* (From γερανος, a crane ; the elongated permanent style resembling the beak of that bird. E.)

Striped Bloody Crane's-bill. *G. sanguineum* β. Linn. γ. Huds. Sm. *G. Lancastriense.* With. Ed. 3 and 4. *G. hæmatodes Lancastriense, flore eleganter striato.* Dill. Ray.

(2) *Petals notched, or cloven ; fruit-stalks two-flowered. Perennial.*

G. PYRENA'ICUM. Petals two-lobed, twice as long as the calyx : leaves kidney-shaped, lower ones with five to seven, upper with three trifid lobes.

Curt. 159—(*E. Bot.* 405. E.)—*Ger. Prov.* 16. 2.

Stem two or three feet high, hairy. *Leaves* hairy, the lower with mostly seven lobes ; lobes with three-clefts, segments rounded or blunt, the middle one frequently scolloped, the upper with mostly three lobes. *Fruit-stalks* longer than the leaves. *Floral-leaves* pointed, four to each fruit-stalk. *Calyx* leaves broad and short. *Petals* as long again as the calyx, deeply cloven ; lobes roundish, entire. Woodw. *Petals* nearly divided down to the base and much larger than in *G. pusillum,* of a bright bluish purple. (*Capsules* keeled, not wrinkled, when young pubescent. *Seeds* without dots. Linnæus confounded this with his *molle* originally, (Sm.) and we have received the same as such from Professor Thunberg. E.)

Var. 2. *Fl. alb.* Blossoms white.

In Chelsea garden, growing as a weed. Curtis.

PERENIAL. DOVE'S-FOOT CRANE'S-BILL. Meadows and pastures. On the banks of the river between Bingley and Keighley, Yorkshire. Near Enfield ; and about Brompton, Chelsea, and in the dry part of the pasturage in Battersea fields. Hudson. At the back of St. John's College, Oxford. Mr. Woodward. (In a lane leading from the south-east part of Edinburgh to the King's Park, abundantly. Sir J. E. Smith. Hedge opposite Rose Hall, Beccles. Mr. F. Turner, in Bot. Guide. Hebburn Ballast Hills, Durham, and Hill of Kinnoul, Perth. Mr. Winch. In Litton, and Monsal Dales, near Tideswell, Derbyshire. Mr. O. Sims. Bot. Guide. Rubbish at Luton Hoe ; and Ford End, Bedfordshire. Abbot. Upper part of Wick grounds, Brislington, near Bristol. E.)

P. June—July.

G. NODO'SUM. Stem quadrangular, upright : leaves five or three-lobed, toothed, rough above, glossy beneath : petals scored, notched.

(*E. Bot.* 1091. E.)—*Clus.* ii. 101. 1—*Ger. Em.* 947. 2—*Park.* 703. 2—*J. B.* iii. 478. 1—*Pet.* 65. 4—*H. Ox.* v. 16. 22—*Clus.* ii. 101. 2.

Stem spreading, more compressed than in *G. striatum.* *Petals* flesh-coloured, with three purple scores, running half way to the point. Linn. *Flowers* before blossoming hanging down, afterwards upright. *Stems* (about eighteen inches high, slender, red, E.) smooth, shining, swoln at the joints. *Leaves,* the lower with five lobes, the upper with three opposite. *Lobes* spear-shaped, wide apart, entire at the base, irregularly serrated upwards, with three strong nearly parallel ribs, and with a few short stiff hairs arising from glands. *Stipulæ* and *flower-stalks* alike small, pointed. *Fruit-stalks* short. *Calyx* leaves awned, smooth. *Petals* red, scolloped ; scollops, blunt, regular. Woodw. (*Capsules* even, downy all over. Sm. E.)

KNOTTY CRANE'S-BILL. Mountainous thickets in Cumberland. Ray; confirmed by Mr. Woodward. (Gathered in rather a hilly situation between Hatfield and Welwyn, Herts, by the Rev. Dr. Abbot. E. Bot. E.)
P. July—Aug.

G. **SYLVAT'ICUM.** (Leaves about seven-lobed, deeply notched and serrated: capsules hairy all over: stamens awl-shaped, fringed. E.)

E. Bot. 121—*Rose* 1, *at p.* 472, *G. palustre*—*Fl. Dan.* 124—*Cam. Epit.* 602—*Park.* 705. 5—*H. Ox.* v. 16. 25.

(*Stem* two or three feet high, branched, leafy. E.) *Flowers* (an inch over, light purple, veined; petals entire, or slightly notched, E.) before blossoming hanging down, afterwards upright. *Leaves* slightly hairy, the lower with seven lobes, middle with five, upper with three. *Fruit-stalks* with sometimes more than two flowers. *Floral-leaves* awl-shaped, small. *Calyx* and *fruit-stalks* very hairy. Woodw. *Hairs* on the flowering stems, edges of the leaves, and on the calyx, ending in small globules. *Leaves*, segments terminating in small fleshy glands: the upper sessile. *Calyx* ribbed, membranous at the edge, ending in fine points.

A dwarf variety with unusually large flowers was remarked in Scotland by Lightfoot.

WOOD CRANE'S-BILL. *G. batrachoides alterum.* Ger. Em. 942. Mountainous thickets and pastures in Westmoreland, Cumberland, and Yorkshire; and sides of rivers in rocky and shady places. Holt wood in Leziate, near Lynn, Norfolk. Mr. Crowe. About Aysgarth Force, Wensleydale. Mr. Wood. Near Coniston, Lancashire. Mr. Woodward. Corby Castle, Cumberland. Dr. Stokes. Very common in moist shady places in most parts of the county of Durham. Mr. Robson. Near Hales Owen, Shropshire. (Oversley wood, Warwickshire. Dudmaston woods, Salop. Hall. Common in Scotland. In Colinton woods with white flowers. Maughan. Grev. Edin. In a field adjoining Dunluce Castle, Antrim. E. Murphy, Esq. E.)
P. June—July.

(3) *Petals notched or cloven: fruit-stalks two-flowered. Annual.*

G. **DISSECT'UM.** Fruit-stalks shorter than the leaves: leaves in five, three, or many-cleft, deeply divided lobes: petals notched: capsules hairy: (seeds reticulated. E.)

Curt.—(*E. Bot.* 753. E.—*Fl. Dan.* 936—*Vaill.* 15. 2—*Plot Oxf.* 9. 4, *at p.* 146—*Pet.* 64. 6 *and* 7—*Fuchs.* 207—*J. B.* iii. 174. 1—*Blackw.* 58. 2.

(*Stems* weak, spreading, or sub-erect, leafy, hairy, twelve to eighteen inches long. E.) *Leaves* divided down to the leaf-stalk into five, and these again into three, segments strap-shaped, usually entire, but the middle one sometimes sub-divided. *Fruit-stalks* very short. *Flower-scales* minute. Woodw. *Calyx* leaves three-ribbed. *Seed-coats* beset with glandular hairs. Hollefear. *Stem* hairs pointing downwards. *Calyx* hairs viscid. Curt. *Calyx* awned. *Flowers* red, (rather small, from their short stalks apparently sessile among the leaves. E.) *Anthers* blue.

JAGGED-LEAVED CRANE'S-BILL. (Welsh: *Pig yr Aran llarpiog.* E.) Road sides; borders of fields, ditch banks.
A. May—Aug.

G. **COLUMBI'NUM.** (Fruit-stalks thrice as long as the leaves, which are in five, very deep, laciniated segments: calyx five-sided; capsules quite even and smooth; seeds reticulated. E.)

E. Bot. 259—*Vaill.* 15. 4—*Pet.* 61. 8.

Calyx large, ventricose. (*Stems* slender, mostly decumbent, hairy. *Hairs* laid flat. *Leaves* a little hairy on both surfaces, divided to the base. E.) *Calyx* somewhat hairy, membranous at the edges, terminated by short awns reddish at the ends. *Petals* marked with three lines; the little tooth between the lobes not very pointed, reddish blue. *Stamens* with ten green glands at the base.

LONG-STALKED CRANE'S-BILL. (Irish: *Creighta.* Welsh: *Pig yr Aran hugoesog.* E.) Corn-fields, pastures, and hedges. Heydon, Norfolk. Mr. Bryant. (About Pulham and Saxston, Norfolk. Mr. Woodward. On Willington Ballast Hills, Northumberland; Matlock; also near Brockham, Surry. Mr. Winch. Opposite the Windmill Inn, between Warwick and Stratford. Perry. On Bryn Gwydryn, Anglesey. Welsh Bot. Queensferry, Mr. Maughan, and about Glasgow. Mr. M. Stark. Hook. Scot. St. Vincent's Rocks, near Bristol. In a barren gravelly soil near the entrance upon Barr-beacon from Birmingham. E.)
A. June—Aug

(G. PUSIL'LUM. Fruit-stalks generally two-flowered: leaves kidney-shaped, palmate, cut, downy: capsules keeled, even, hairy: seeds without dots.

Dicks. H. S.—*Curt.* 36—*E. Bot.* 385—*Cavan. Diss.* 83. 1. E.)

Root throwing out many cylindrical, much branched stems, varying in length according to situation and soil; procumbent when growing alone, but upright when among other plants, and frequently attaining the height of two feet. *Stem* and *branches* just sensibly downy and soft to the touch. *Leaves* kidney-shaped, deeply lobed, hairy, especially on the margin, and veins on the under surface: hairs expanding. *Root* and lower *stem-leaves* generally seven-lobed; upper *leaves* five-lobed, more deeply divided, opposite, unequal; lobes, wedge-shaped, three-cleft, bluntish. *Floral-leaves* four, awl-shaped, hairy. *Fruit-stalks* alternate, axillary, upright. *Calyx* hairy, awnless. *Petals* inversely heart-shaped, bluish purple, notched; claws upright, about the length of the calyx. *Stamens* distinct at the base, five with and five without anthers. *Seed-coats* even, covered with short bristles pointing upwards. *Seeds* smooth.

Varies with leaves alternate towards the tops of the stem and branches, and with three or sometimes four flowers on a fruit-stalk. Robson.

(In general habit scarcely to be distinguished from *G. molle,* but its *capsules* being neither wrinkled nor free from hairiness, clearly discriminate the species; its *flowers* also much smaller, with only five stamens bearing *anthers.* E.)

(A very diminutive variety is represented as *G. humile,* Cavan. Diss. 83. 2. R. Syn. 16. 2. a. b. *G. columbinum humile, flore cæruleo minimo.* High ditch banks. At Low Layton, early in spring. Dillenius. (By the side of the foot-way at the sixth mile stone from the standard on Cornhill on the Mitcham road, July, 1821. Mr. Griffith. E.)

SMALL-FLOWERED CRANE'S-BILL. Welsh: *Pig yr Aran mânflodeuog.* *G. pusillum.* Linn. *G. malvæfolium.* Scop. With. *G. parviflorum.* Curt. *G. columbinum majus, flore minore cæruleo.* R. Syn. Hedges and waste places, as common about Darlington as *G. molle.* Mr. Robson. (Between Dorking and Betchworth Park; and on Hebburn Quay, Durham. Mr. Winch. Above the beach between Aberffraw bridge and the sea, Anglesey. Welsh. Bot. Fisherrow Links, and Arthur's Seat. Maughan. Grev. Edin. E.) A. June—Sept.

G. MOL'LE. (Fruit-stalks two-flowered, alternate with the floral leaves: leaves roundish, lobed, downy: capsules wrinkled, smooth: seeds without dots. E.)

Curt. 141—(*E. Bot.* 778. E.)—*Fl. Dan.* 679—*Vaill.* 15. 3—*Pet.* 64. 2.

Stem hairy, hairs expanding. Trailing when growing alone, upright when amongst other plants. *Blossoms* sometimes almost as large as in *G. pyrenaicum.* Curt. (usually much smaller. E.) *Flowers* purplish red; sometimes white. Ray. *Seeds* marked with transverse wrinkles; in *G. rotundifolium* they are dotted; the petals entire, but cloven in *G. molle.* Afzel. (*Stems* variable in length, from a few inches to a foot. E.)

SOFT CRANE'S-BILL. DOVES'-FOOT CRANES'-BILL. (Welsh: *Troed y golomen.* E.) Dry banks, corn-fields, meadows, and pastures, in a sandy soil. A. April—Oct.

(4) *Petals entire; fruit-stalks two-flowered. Perennial.*

G. PHÆ'UM. Fruit-stalks solitary, two-flowered, opposite the leaves: calyx somewhat awned: (capsule keeled, hispid at the base, wrinkled above. E.)

(*E. Bot.* 322. E.)—*Fl. Dan.* 987—*Kniph.* 5—*Walc.*—*Clus.* ii. 99. 1—*Ger. Em.* 942. 3—*Park.* 704. 3.

Stems upright, nearly cylindrical, woolly towards the base, from eighteen inches to two feet high; joints large, tinged with red. *Leaves,* the lower with six or seven lobes, the middle ones with four or five, the uppermost three or four; lobes serrated. *Fruit-stalks* forked, with two flowers. *Calyx* thick set with short hairs, terminated by little globules, interspersed with a few long, soft, woolly, hairs; *leaves* with three longitudinal lines, and terminated by little blunt callous substances. *Petals* wavy, egg-shaped but angular, dark chocolate coloured, shining; *claws* greenish white, marked with five lines. *Filaments* purple, broad and hairy at the base, slightly united by means of five green glandular substances placed on the outside of them; after flowering turned outwards. *Anthers* whitish, the seams marked with a purple line. *Pollen* greenish yellow. *Germen* woolly. *Style* green, shorter than the stamens till the time of flowering.

DUSKY CRANE'S-BILL. Mountainous pastures. In a dingle at Downing, Flintshire. Rev. S. Dickenson. Near Cradley, Worcestershire. (On a bank at Ash-Bocking, Suffolk. Mrs. Cobbold, in Fl. Brit. About Newburgh, Yorkshire. Rev. Archdeacon Pierson. ditto. At Alderbury, near Salisbury. Dr. Maton. At Tovell, in the valley by the fulling-mill, Kent. Ray. Between Cowen Bridge near Kirkby Lonsdale. Mr. Winch. Beckey Fall, near Manaton, Devon. Miss Filmore. Collington woods. Maughan, in Grev. Edin. Banks of Clyde at Blantyre Priory. Hopkirk. E.) P. May—June.

G. PRATEN'SE. Leaf-stalks nearly central: leaves with many divisions, wrinkled: lobes with winged clefts, acute: (capsules hairy all over, not wrinkled: stamens dilated at the base. E.)

Curt. 250—(*E. Bot.* 404. E.)—*Kniph.* 5—*Matth.* 857—*Clus.* ii. 100. 1—*Dod.* 63. 2—*Lob. Obs.* 376. 3, *and Ic.* i. 659. 2—*Ger. Em.* 943. 1—*Pet.* 65. 7—*Walc.*—*Ger.* 797. 2—*Fuchs.* 208—*J. B.* iii. 475—*H. Ox.* v. 16, 14.

Stem two to three feet high. *Leaves* with seven to five divisions; segments lobed, deeply toothed, hairy, with strong ribs underneath; those of the upper leaves almost strap-shaped. *Leaf-stalks* long. *Floral-leaves* four, spear-shaped, pointed. *Fruit-stalks* very short, downy. *Petals* very large, blue, or white. Woodw. *Stems* forked, tinged more or less with red; hairs on the upper branches white, and terminated by minute dark red globules. *Leaf-stalks* nearly central. *Leaves* with five to seven divisions; segments wing-cleft, which are more or less jagged and toothed. *Calyx* ribbed, membranous at the edges, terminated by points, thick set with fine white hairs tipt by scarlet globules. *Petals* inversely egg-shaped, with seven to nine whitish lines, and a little hairy at the base. *Filaments* very broad and somewhat concave at the base. *Anthers* purple. *Pollen* yellow.

Crowfoot-leaved Crane's-bill. (Welsh: *Pig yr Aran y weirglawdd.* E.) Moistish meadows and pastures. P. June—July.*

(5) *Petals entire: fruit-stalks two-flowered.* * *Annual.*

G. lu'cidum. Calyx pyramidal, the angles raised, wrinkled: leaves roundish, five-lobed, (capsules wrinkled. E.)

(*Hook. Fl. Lond.* E.)—*Fl. Dan.* 218—*E. Bot.* 75—*Kniph.* 11—*Thal.* 5—*J. B.* iii. 481—*Park.* 707. 9—*Walc.*—*Pet.* 64. 12—*H. Ox.* v. 15. 6.

Stems, (spreading, brittle, about a foot long, E.) shining, yet slightly hairy. *Leaves* the same, kidney-shaped, with mostly five triplicate lobes: the middle one with usually three scollops, the side ones entire; in rocky situations only half an inch broad, and not so much divided. *Pedicles* wide apart. *Flower-scales* very minute. Woodw. Whole *plant* often assuming a dark purplish red colour like *G. Robertianum*. *Stem* branched. *Calyx* not quite equal. *Petals* rose red, small.

Shining Crane's-bill. (Welsh: *Pig yr Aran disclaer.* E.) Walls, roofs, rocks, dry banks, and shady places, in a sandy soil, and frequently among corn on a chalky soil, and in exposed situations, as near Stamford; Bury, Suffolk; common in the North. Mr. Woodward. (At Ormathwaite, Keswick, Matham, and Dunkeld. Mr. Winch. About Folkstone. Mr. G E. Smith. On rocks at Great Malvern; and about Warwick. Purton. Donolly castle, Argyleshire. Dr. Bostock. Tyfry, Anglesey. Welsh Bot. Abundant about the entrance of Peak's Hole, Derbyshire; road sides about Brislington and Stockwood, near Bristol; Cheddar cliffs, Somersetshire. E.) A. June—Aug.

G. rotundifo'lium. Petals entire, as long as the calyx: stem spreading: leaves kidney-shaped, cut: capsules even, hairy: seeds reticulated.

(*Hook. Fl. Lond.* 216. E.)—*E. Bot.* 157—*Pet.* 64. 4 *and* 3—*Fuchs.* 205—*J. B.* iii. 473—*Ger.* 793—*Walc.*—*Matth.* 855—*Dod.* 61. 2—*Lob. Obs.* 376. 2, *and Ic.* i. 658. 1—*Ger. Em.* 938—*Park.* 706. 2—61. 1—*H. Ox.* v. 15. 3.

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* (The large and elegant blossoms have recommended this plant to garden culture, which has produced flowers both purple and striped. Though our British species cannot boast the splendid display of rich colours exhibited by the innumerable tribe of exotic *Geraniaceæ*, they partake of that elegance with which the name is justly associated, and are fit ornaments of the wilderness or rock work. They attract a variety of flies, particularly those of the genus *Empis*. On this and some other kinds of Geranium, may be detected the minute parasitic fungus *Uredo Geranii*, figured and described in Grev. Scot. Crypt. 8. E.)

Stem widely dividing, cylindrical, downy, viscid. *Leaves* rounded, velvety, somewhat viscid, especially underneath, lobed, with a red point in the hollows. *Leaf-stalks* reddish brown. *Calyx* awned, wrinkled, expanding, with three longitudinal wrinkles. *Petals* wedge-shaped, very blunt, with three reddish brown scores at the base, the under surface not lying upon, but raised from the calyx. *Anthers* yellow. Linn. *Stipulæ* spear-shaped; floral-leaves always of a deep red. Woodw. *Seeds* dotted. *Flowers* purplish flesh colour, sometimes white. (All the *leaves* opposite. Sm. E.)

ROUND-LEAVED CRANE'S-BILL. Walls, roofs, ditch banks, and sandy pastures, about Bath, Bristol, Battersea, Wandsworth, Mortlake, and Kew. In Suffolk, common. Mr. Woodward. St. Vincent's Rocks, Bristol. (On old walls about Hampton, Claverton, and Hinton, in Somersetshire. Mr. Sole. On the hedge banks at Salt Meadows near Gateshead, Durham. Winch Guide. Common on walls in Oxford. Rough and sterile places about Garn, Denbigh. Mr. Griffith. On a wall at Hartlebury, Worcestershire. Purton. Arthur's Seat. Dr. Graham. Grev. Edin. E.) A. May—July.

OBS. Should the characters attempted to be principally derived from the *seeds* and *seed-coats* or *capsules* prove unsatisfactory or unavailable, *G. columbinum, pusillum, molle,* and *rotundifolium,* whose distinctions have occasioned much trouble, may be clearly understood by attending to the following circumstances.

G. columbinum. Its awned calyx distinguishes it from *molle* and *pusillum,* and its notched petals from *rotundifolium.*

—*pusillum.* Its awnless calyx distinguishes it from *columbinum,* its hairy seed-coat from *molle,* and its notched petals from *rotundifolium.*

—*molle.* Its awnless calyx distinguishes it from *columbinum,* its hairless and wrinkled seed-coat from *pusillum,* and its notched petals from *rotundifolium.*

—*rotundifolium.* Its entire petals and dotted (or, according to Smith, peculiarly reticulated, E.) seeds, distinguish it from the other three.

(Consult also an ingenious paper in Gent. Mag. p. 487; 1797. E.)

G. ROBERTIA'NUM. Leafits by fives or by threes, lobes wing-cleft: calyx decangular: (capsules rugose. E.)

Curt.—*Walc.*—*Blackw.* 480—(*E. Bot.* 1486. E)—*Lonic.* i. 152. 1—*Fl. Dan.* 694—*Dod.* 62—*Lob. Obs.* 375. 1, *and Ic.* i. 657. 2—*Ger. Em.* 939, *and* 945. 5—*Park.* 710. 8—*H. Ox.* v. 15. 11—*Pet.* 65. 5—*Fuchs.* 206—*Trag.* 108—*J. B.* iii. 480—*Matth.* 858.

Plant strong scented, beset with pellucid hairs, but becoming smoother as it grows older. *Upper leaves* divided into three parts, the lowermost into five leafits united at the base, wing-cleft; segments terminated by little sharp thorns. *Calyx* awned, the angles more evident as the seeds ripen. *Petals,* claws long, border a little ragged, with three faint white lines. *Filaments* not very evidently united. *Anthers* red. *Pollen* yellow. *Style* hairy. *Summits* fine crimson. *Stems* branched, spreading, (about a foot long; towards autumn, as also other parts, tinged with red. *Blossom* red, sometimes white.

(Salisbury noticed the two curious bundles of silvery threads arising from the upper part of each side the cleft of the corcule, and attached at the opposite extremity to the stigma; so that when, as in *G. lucidum,* the beak by its elastic force flings the corcule from its receptacle, it still hangs suspended by these two appendages, which are not much unlike the coma attached to the seeds of *Asclepiadeæ.* Hook. E.)

Var. 2. *Fl. alb.* White-flowered.

Road from Litchfield to Stafford, a little beyond the fourth mile stone, plentifully. Mr. Saville. Den of Portend, near the Loch of Monteith. Mr. Brown. Near Exeter. Mr. Martyn. (A large bed of it on the shingles near the mouth of the Ystwith, Cardiganshire. Mrs. Bowyer Adderley. E.)

Var. 3. (*G. lucidum saxatile, foliis G. Robertiani.* R. Syn. 358. E.) Whole plant shining. Leaves smaller and more deeply divided: joints numerous.

Pet. 65. 6.

Near Swanning, Dorsetshire. Sherard. Shore of Selsey Island. Dillenius. (A weed in Chelsea garden. Smith. E.)

HERB ROBERT.* (Irish: *Ruhell Rih.* Welsh: *Pig yr Aran troedrudd.* E.) Walls, hedges, rubbish, and stony places. A. April—Aug.†

POLYANDRIA.

ALTHÆ'A.‡ *Calyx* double, outer nine-cleft: *Capsules* nunumerous, monospermous.

A. OFFICINA'LIS. Leaves undivided, slightly five-lobed, soft and downy.

Kniph. 6—*Ludw.* 1—*E. Bot.* 147—*Woodw.* 53—*Fl. Dan.* 530—*Blackw.* 90—*Park.* 304. 1—*Fuchs.* 15—*Trag.* 371—*J. B.* ii. 954—*Lonic.* i. 157. 1—*Ger.* 787—*Matth.* 925—*Clus.* ii. 24. 1—*Dod.* 655. 1—*Lob. Obs.* 373. 1, *and Ic.* i. 653. 1—*Ger. Em.* 933. 1—*H. Ox.* v. 19. 12.

Stem upright, a yard high or more, cottony, cylindrical, somewhat branched. *Leaves* egg-spear-shaped, woolly, very soft, velvety; the upper smaller, with generally three imperfect lobes, serrated, with mostly five ribs underneath; the lower larger, with seven ribs, serrated, or rather scolloped. *Flowers* rather large, from the bosom of the leaves, on fruit-stalks, in a kind of panicle. *Flowers-scales* many cleft, bristle-shaped. *Petals* nicked, flesh-coloured. Relh. *Leaves* on leaf-stalks, angular. *Calyx,* the outer with sometimes eleven or twelve segments. *Petals* fringed at the base. (*Pubescence* stellate. E.)

MARSH-MALLOW. WYMOTE. (*Althæa* of Pharm. Lond. E.) Salt marshes and banks of rivers. Salt marshes, Norfolk and Suffolk. Mr. Woodward. Sea shore near Marazion and Penzance, Cornwall. Mr. Watt. (Brading, and Quor Abbey, Isle of Wight. Dr. Bostock. Near Ardbigland on the Solway Firth. Dr. Burgess. Hook. Scot. E.) P. Aug.§

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* (The proper name after that of a celebrated Curator of the Oxford Botanic garden. E.)

† (As a vulnerary and abstergent, beneficial in hemorrhages, this, and some other species, have been long in repute. In North Wales, particularly in the neighbourhood of Rhydar, this plant has acquired much celebrity as a remedy for nephritic or calculous complaints. A handful of the dried leaves may be infused as tea, and a teacup full taken occasionally. Mr. Watt. The leaves, while yet green, are subject to a pretty little parasite, *Dothidea Robertiani*; "in scattered clusters, very minute, dot-like, hemispherical, black, opening at length at the apex." Grev. Scot. Crypt 146. E.)

‡ (From αλθεω, to heal; alluding to its sanative virtues. E.)

§ The whole plant, particularly the root, abounds with mild mucilage. The root boiled is much used as an emollient cataplasm, and an infusion of it is very generally

(A. HIRSU′TA. Leaves three-cleft, rough with hairs, smooth on the upper surface: peduncles solitary, one-flowered.

Jacq. Austr. 170.

Stems spreading, rough with expanding hairs. *Calyx*, the outer with eight segments, inner the length of the blossom, sharp-pointed. *Blossom* pinky white, scolloped. Linn. *Root-leaves* kidney-shaped. Hal.

ROUGH ALTHÆA. This species was first announced to the British Botanist by the Rev. Jelinger Symons in his Synopsis, as discovered in a field near Cobham, by Mr. Jacob Rayer, in 1792. By the kindness of Mr. W. Christy, we have been favoured with specimens gathered on the same spot in 1827 by Mr. W. Peete. P. E.)

MAL′VA.* *Calyx* double, outer three-leaved: *Capsules* eight or more, whorled, monospermous.

M. ROTUNDIFO′LIA. Stems short, prostrate: leaves heart-shaped, circular, plaited, indistinctly five or seven-lobed: fruit-stalks when in fruit declining.

Curt.—*Fl. Dan.* 721—(*E. Bot.* 1092. E.)—*Fuchs.* 508—*J. B.* ii. 549. 2—*Trag.* 369—*Dod.* 653. 2—*Lob. Obs.* 371. 2, *and Ic.* i. 651. 1—*Ger. Em.* 930. 2—*Lonic.* i. 156. 2.

Stem and *branches* lying close to the ground. *Leaves* serrated. *Leaf-stalks* very long. *Leaf-scales* in pairs, spear-shaped, fringed. *Fruit-stalks* much shorter than the leaves, with one flower. *Blossom* purplish, or white, with purple veins. Woodw. *Petals* twice as long as the calyx.

(Var. 2. *M. pusilla.* E. Bot. 241. *M. rotundifolia* β. Sm. By Hooker and Greville scarcely deemed a permanent variety. *M. parviflora.* Huds.; not of Linn. Petals so diminutive as scarcely to exceed the calyx. E.)

MAULS. DWARF MALLOW. (Welsh: *Hocys bychan.* E.) Road sides, among rubbish. A. June—Oct.

M. SYLVES′TRIS. (Stem erect, herbaceous: leaves five or seven-lobed, toothed: outer calyx leafits partly united at the base: leaf and flower-stalks hairy. E.)

Curt.—(*E. Bot.* 671. E.)—*Blackw.* 22—*Woodv.* 54—*Fuchs.* 509—*J. B.* 949. 1—*Ger.* 785. 1—*H. Ox.* v. 17. 8—*Dod.* 653. 1—*Lob. Obs.* 371. 1, *and Ic.* i. 605. 2—*Ger. Em.* 930. 1.

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prescribed in all cases wherein mild mucilaginous substances are useful. (It is further recommended in sharp defluxions upon the lungs, hoarseness, dysenteries; and likewise in nephritic and calculous disorders; not that it has any peculiar power of dissolving or expelling the calculus, but by lubricating and relaxing the vessels, it procures a more free and easy passage. Of several officinal preparations from this herb, the syrup alone is now retained. Mallows have not only been long celebrated for assuaging wounds, but were used to decorate the graves of our ancestors: and so indispensable were they deemed to each domicile of the living, that, as a matter of decided ill omen, the poet exclaims,

"Alas! when *Mallows* in the garden die." E.)

* (Possibly from *μαλασσω*, to soften; in reference to its emollient and relaxing qualities; though Gerard deduces it from the Chaldee name *Malluach*, as growing among rubbish abounding in saltpetre. E.)

Stem, two or three feet high, more or less upright, rough, hairy, nearly of the same thickness throughout, rather woody. *Leaves* with five lobes, rarely six or seven, unequally serrated, hairy on both sides, with a dark purple stain near the insertion of the leaf stalk. *Leaf-stalks* triangular, hirsute. *Fruit-stalks* nearly cylindrical, from the bosom of the leaf-stalks or branches. *Calyx outer*, leaves spear-shaped; both *inner* and *outer* hairy without, smooth within, toothed at the edges, and the teeth terminating in long hairs. *Petals* large, deeply notched, purple, with three or four darker streaks. *Summits* eleven or twelve. The colour of the *flowers* varies with more or less of a bluish cast, and the leaves are liable to be variegated with yellowish blotches.

COMMON MALLOW. (Irish: *Hocus Fehain*. Welsh: *Hoccys*, &c. *cyffre-ain*. E.) Hedges, road-sides, and amongst rubbish. Its trivial name ill accords with its usual places of growth in this country, for I do not recollect ever having found it in a wood. A. June—Aug.*

* (Professor Davy observes that the fibres of all kinds of Mallows are particularly beautiful, especially of this species. They are finer than camel's hair, and there is no difficulty in procuring them. Month. Mag. vol. 28. This species has been particularly recommended as a substitute for hemp, according to a prospectus of the Economic Institution. The thread procured by maceration is said to make more beautiful cloths and stuffs than even flax. From the *Malvæ*, likewise, a new sort of paper, particularly suitable for the hanging of rooms has been fabricated in France. Our native kinds merit more attention from our ingenious artists than they have hitherto engaged, though to the agriculturist they are little better than cumber grounds. To the admirer of Flora, even in her most homely attire,

"The *Mallow* purpling o'er the pleasant sides
Of pathways green,"

will be more than tolerated. The leaves and flowers yield a glutinous and emollient juice, sometimes applied externally; but *Althæa officinalis* possesses the same qualities in a more eminent degree. These plants were formerly considered as a wholesome ingredient in other food, and some foreign species are still thus used in China, Egypt, and other countries. Horace likewise alludes to the same purpose,—

—— "Me pascunt Olivæ,
Me Cichorea, levesque *Malvæ*."

And again,

"*Malvæ* salubres corpori."

Apion (*Curculio*) *Malvæ*, is extremely common on the Mallow, and is found upon no other plant. Kirby. It also affords nutriment and shelter to *Apion Oaurum*, and *A. æneum*, *Haltica rufipes*, and *Noctua clavaria*.

Though this may not be a fit place for physiological disquisition, especially if extending beyond the plant under immediate inspection, we cannot entirely omit allusion to discoveries, which, if proved to be correct, may lead to results the most important. Early microscopic observers have professed to be acquainted with the apparent metamorphosis of animalcules into vegetables. The accounts of certain seeds possessing spontaneous motion, and then sending forth roots and becoming fixed vegetables, were not unknown to Mr. Ellis, author of the work on Corallines, who has given a satisfactory solution of the phenomenon. He says, "The minute seeds which evolve under water from fungi and mosses, and appear to have spontaneous motion, derive that motion from more minute animalcules in the water, which, by pecking at the seeds, moved them about in various directions, while the little animals were scarcely visible, till the food they had eaten discovered them." In 1745, Mr. T. Needham published a volume, in which he not only minutely and accurately describes the action of the pollen of plants, but has correctly delineated it in the act of ejecting the particles contained within it. It must be recollected that the farina, or pollen, is supposed to perform the function of fecundating the seed; and when seen through a microscope, every particle appears a little bag, containing a meal yet finer. The grains of the pollen of *Geranium* do not exceed the 400th

M. MOSCHA'TA. Stem upright: root-leaves kidney-shaped, cut: stem-leaves with five divisions: segments between winged and many-cloven: *leafits of the outer calyx distinct.*

Curt.—(*E. Bot.* 754. E.)—*Fl. Dan.* 905—*Col. Ecphr.* 147—*Walc*—*J. B.* ii. 1067. 1—*H. Ox.* v. 18. 4.

(Two or three feet high. *Bloss.* large and handsome, rose-coloured, one or two together from the axils of the terminal leaves. E.) In *M. alcea* the calyx has a protuberating ring at the base, and the outer cup is formed of three egg-shaped leafits, but *M. moschata* has no ring at the base of the calyx, and the leafits are spear-shaped. Curt. *M. moschata* may also be distinguished by a musk-like smell proceeding from the herbage, but this is not always perceptible, and in this case it has been mistaken for *M. alcea,* not one of our natives.

MUSK MALLOW. (Welsh: *Hoccys mws.* E.) Meadows, pastures, road sides, and ditch-banks. Hertfordshire, Huntingdonshire, Derbyshire, and the north, frequent In Norfolk and Suffolk sparingly. Mr. Woodward. Common in the midland and more southern counties. P. July—Aug.

(A variety with white blosssoms has been observed by Mr. Dillwyn in fields near Eycthorn, in Kent, Bot. Guide; occasionally introduced into gardens. E.)

LAVATE'RA.* *Cal.* double, the *outer* three-cleft: *Capsules* many, equal in number to the summits, placed in a circle, single-seeded.

L. ARBO'REA. Stem arborescent: leaves with seven angles, downy, plaited: fruit-stalks crowded, axillary, single-flowered.

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part of an inch in diameter; the granules within do not exceed the 10,000th part of an inch. The pollen of our present species (the *Mallow*) is surrounded by minute spines, and the action of this pollen in water is represented, (Fig. 1 and 2, copied from Needham, in Mag. Nat. Hist. vol. ii. p. 2.) as though the case or shell emitted through a small aperture a train of minute globules, contorting themselves from one side to the other. These observations stand confirmed by Mr. R. Bakewell; but that truly philosophical observer, Mr. R. Brown, has recently promulgated microscopical experiments to prove, not merely the general existence of active molecules in organic, but even in inorganic bodies; insisting upon no less a novelty than that the ultimate particle obtainable from all bodies, organic and inorganic, "has inherent motion, like unto vital action." His observations were extended from grains of pollen immersed in water to particles of metallic and mineral substances, until he was induced to believe that he had detected even still more minute molecules in rapid oscillating motion. The elementary molecules of organic bodies have been admitted by Buffon, Needham, Wrisburg, Müller, and Dr. Milne Edwards; and in 1814, Dr. Drummond, now Professor in the Belfast Academical Institution, detected active molecules in the eyes of fishes (vid. his Thesis "De Oculi Anatomia Comparativa," and Tr. R. Soc. Edin.); but Mr. Brown finding the molecules to exist in various animal and vegetable tissues, whether living or dead, at length became convinced that even common dust or soot is "entirely composed of these (perhaps ultimate) molecules, possessing visible rapid, spontaneous, and inherent motion." Certain sceptical philosophers have been inclined to attribute these extraordinary appearances to vibration, external agitation, optical deception, or pre-existing animalcules; but well knowing from personal experience the extreme fidelity and accuracy of our friend Mr. Brown, we shall only presume at present to conclude,—

"That things improbable may still be true." E.)

* (Conferred by Tournefort in honour of LAVATER, a physician of Zurich; (not the physiognomist.) E.)

(*E. Bot.* 1841. E.)—*Gærtn.* 136. 2, *Calyx and fruit*-*Besl. Hort. Eyst.* vi. 6. 1, *on the authority of Gærtner, and Cavanill. Diss.* v. 139. 2, *on that of Gmelin.*

Stem scarred, in the smaller plants like that of a cabbage, but taller; in the larger four to six or eight feet high, and as much as four inches in diameter. *Leaves* with seven, five, or three angles; soft as velvet. *Flowers* mostly in pairs. *Calyx*, *outer* much larger than the inner; segments broad, blunt, sometimes notched. *Blossom* purplish red, with dark blotches at the base of the petals. The cylinder of united filaments woolly at the base.

SEA TREE-MALLOW, or VELVET-LEAF. (Welsh: *Mor Hocrysen.* E.) Sea shores. Hurst Castle, opposite the Isle of Wight. Rocks of Caldey Island; Bass Island, near Edinburgh. Godrevy Island, near Portreath; Mullion-gull rock in St. Ives' Bay, &c. Borlase. Ray. Inch Garvey and Myaric-Inch, in the Firth of Forth. Sibbald. Cornwall and Devonshire. Hudson. Chissel in Portland Island. Mr. Waring. (Kingsgate, near Ramsgate; Steep Holmes-Island, Severn Sea. Mr. W. Christy. On the South Stack, near Holyhead. Welsh Bot. E.) At Teignmouth, near the Den. B. July—Oct.

TAXUS.* B. and F. flowers on different plants: *Bloss.* none: *Calyx* a four or seven-leaved bud.
B. *Anthers* target-shaped, eight-cleft.
F. *Style* none: *Seed* one, surrounded at the base by a pulpy receptacle; upper half naked.

T. BACCA'TA. Leaves solitary, strap-shaped, two-ranked, pointed, aggregate: receptacle of the stameniferous flowers somewhat globular.

(*E. Bot.* 746. E.)—*Hunt. Evel. p.* 378. i. *p.* 275. *Ed.* ii.—*Blackw.* 572—*Kniph.* 4—*Cam. Epit.* 840—*Tourn.* 362. 1—*J. B.* i. *b.* 241. 2—*Dod.* 859. 1—*Lob. Obs.* 637. 1, *and Ic.* ii. 232—*Ger. Em.* 1370—*Ger.* 1187. 2—*Park.* 1412—*Gars.* 580—*Matth.* 1099.

(*Bark* reddish, peeling off. *Branches* horizontal. *Leaves* very entire, dark green, smooth, shining, evergreen. *Blossoms* axillary, scattered, sessile, solitary; *floral leaves* tiled, membranous. *Berries* or *Drupes* very singular, proceeding from a receptacle which half covers and protects the seed, coming to perfection the second year; concave, pulpy, sweet, viscid, when ripe of a beautiful red and waxy appearance.

YEW TREE. (Irish: *Whar.* Welsh: *Ywen; Pren-yw.* Gaelic: *An-t' iuchar.* E.) Mountainous woods and hedges. Mountains of Westmoreland, Cumberland, and hills of Herefordshire. Hudson. Clefts of the rocks on Giggleswick Scar. On the rocks of Borrowdale, and on Conzic Scar, near Kendal, truly natural stations. Mr. Woodward. On the mountain called Yew-barrow, clearly indigenous, and in several other inaccessible places on Furness Fells. Mr. Atkinson. In Castle Eden Dean, Durham, undoubtedly wild. Mr. Robson. (Woods about Egleston. Rev. J. Harriman. Shores of the Wear below Hilton Castle; woods above Derwent Bridge, &c. Durham. Mr. Winch. In Anglesey. Welsh

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* (From τόξον, a bow; it being long celebrated as the best material for making those formidable implements. E.)

Bot. Indigenous to some of the limestone eminences of Gloucestershire. One specimen in particular occurs in Stinchcombe wood, standing nearly on the verge of the lofty elevation overhanging the village. In the reign of Charles the First, this tree, still vigorous, afforded a three days' and nights' concealment to an ancestor of the writer, during the plunder and conflagration of Melksham's Court, his residence. Mr. Oade Roberts. Many primeval Yew trees are scattered over the Clee hills, Salop, and the cliffs of Cheddar, Somerset. E.) T. March—April.[*]

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[*] This tree grows best in a moist loamy soil. On bogs or dry mountains it languishes. It bears transplanting even when old. It is often planted to make hedges; and as these hedges admit of clipping, they form excellent screens to keep off the cold winds from tender plants. (Its tonsile properties, for geometrical gardening, have been too generally rendered available for uncouth shapes. A most favorable specimen of this obsolete art is still preserved in the pleasure-grounds of Gormanston Castle, Meath. This very antique Yew garden was originally intended to represent the cloisters of a monastery. The outer walls, and open arches towards the centre being of clipt Yew, and the space, so surrounded, answering to the quadrangle, laid out as a flower-garden. But all that is formal and unnatural being obnoxious to genuine taste, however such ingenious mutilations may excite the admiration of the vulgar, the more refined observer will rather exclaim,

—— "Doth a garden trimm'd and tortured by
Hands that can dextrous wield the lopping knife
Show lov'lier than nature's free wild grounds?"

Of the Yew there is a variety, with short leaves; also one with striped leaves, valued among the variegated tribes. The Irish Yew, of the nurseries, is still more peculiar, never branching out or spreading, but aspiring like a cypress, with leaves larger, somewhat recurved, the plant bearing berries when only eighteen inches high. E.) The wood is hard, smooth, and beautifully veined with red. It is converted into bows, axle-trees, spoons, cups, cogs for mill-wheels, and flood-gates for fish ponds, which hardly ever decay, (bedsteads said to deter bugs; and gate posts lasting as those of iron. E.) The berries are sweet and viscid. Children often eat them in large quantities without inconvenience. Swine and field-fares are fond of them. The fresh leaves are fatal to the human species. Three children were killed by a spoonful of the green leaves. They died without agony, or any of the usual symptoms of the vegetable poisons. The same quantity of the dried leaves had been given the day before without any effect. Percival's Essays, iii. Sheep and goats eat it; horses and cows refuse it. Linn. But there are instances of both having been killed by eating it, branches having been found in their stomachs; Gent. Mag. lvi. 941; and sheep are said to have been killed by browsing upon the bark. I suspect that the loppings in a half dried state are most detrimental to cattle. (In August, 1822, E. Nicholls, Esq. of Ringmer, Sussex, turned a horse into a field in which were some sprigs of Yew tree, which had been clipped off in the course of the day. The horse eat of these, afterwards drank at a pond, and quickly died. In January, 1823, in a deep snow, Messrs. Woodward, of Chelmsford, in Kent, turned out three healthy horses into a small close, adjoining which was a Yew tree. In three hours they were found dead, with Yew in their stomachs. It is believed to be equally fatal to sheep. That the very shade of the Yew tree ("*Taxique nocentes*" Virg.) should prove mortiferous, may probably be deemed a mere fable, though currently related by the ancients, whence it is inferred that some of those writers at least described a different tree. Evelyn states, "Notwithstanding what Pliny reports concerning its shade, (vid. Martyn's Virgil, ii. 166;) the stories of the air about Thasius; the fate of Cantivulcus, mentioned by Cæsar, and the ill character which the fruit has vulgarly obtained in France, Spain, and Arcadia, I shall venture to observe

"Quam multa arboribus tribuuntur crimina falsò?"

Theophrastus was, however, so far correct, "Si jumenta folia comederint, emoriuntur." Four ounces of sweet oil, taken at two doses, in warm ale, and after that a pint of salt and water, have been found to relieve cattle thus poisoned. E.)—Several mountainous places are named in the Gent. Mag. 1793, p. 161, in which it doubtless grows wild. (It is supposed, also, in former ages, to have prevailed in Ireland as an aboriginal, by the

PINUS.* B. and F. flowers on the same plant: *Bloss.* none.
B. *Calyx* scales forming a bud, expanding: *Anthers* naked, sessile, adhering to the scales.

numbers discovered in a fossil state; though at present there are said to be none but planted Yews in that country. E.) Those trees situated in the accessible parts of the mountains are generally cut down and brought to market for chairs and steps of ladders, for which use their durability renders them valuable, (while others, unassailable by man, for a succession of ages, bid defiance to

"The raging tempests and the mountains' roar,
Which bind them to their native hills the more."

Strutt, in 'Sylva Britannica,' gives some admirable representations of these interesting trees: as the very ancient ones at Fountain's Abbey, Yorkshire, supposed to have existed anterior to the foundation of the monastery, or at least co-eval with that date (1128.) Of six remaining, one measures 26 feet in girt at 3 feet from the ground. and the Fortingal Yew, in the church yard, amid the Grampian mountains, though now disjoined by the lapse of many centuries, when entire, according to Pennant, was 56 feet in circumference. At Martley, Worcestershire, grows one twelve yards round; and an extraordinary tree of the same kind may yet be seen in the palace garden at Richmond, planted three days before the birth of Queen Elizabeth. But still more interesting is the justly celebrated Yew tree at Ankerwyke near Staines, (fifty feet high, and in girt three feet above the ground twenty seven feet), to which, and the current tradition connected therewith, as standing in the vicinity of Runnymede, Fitzgerald thus alludes:

"Here patriot barons might have musing stood,
And plann'd the charter for their country's good:
* * * * * *
Here, too, the tyrant Harry felt love's flame,
And, sighing, breath'd his Anna Boleyn's name;
Beneath the shelter of this Yew tree's shade,
The royal lover woo'd the ill starr'd maid."

But for an unrivalled poetical description of extraordinary Yew trees we are indebted to the muse of Wordsworth.

"There is a *Yew* tree, pride of Lorton Vale,
Which to this day stands single in the midst
Of its own darkness, as it stood of yore,
Nor loth to furnish weapons in the hands
Of Umphraville or Percy, ere they marched
To Scotland's heaths, or those that crossed the sea,
And drew their sounding bows at Azincour,
Perhaps at earlier Cressy, or Poictiers.
Of vast circumference, and gloom profound,
This solitary tree! a living thing
Produced too slowly ever to decay;
Of form and aspect too magnificent
To be destroyed.—But worthier still of note

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* (Etymologists often fail to elucidate their subject, by limiting their researches to the more classical languages, and deriving their most plausible conjectures from such a source. In reference to the present name, is usually given the Greek synonym *πιτυς*, or Pitch-tree; but De Theis, taking a wider range, deduces *Pinus* far more satisfactorily from the Celtic, and shews it to exist variously modified in all the dialects of that ancient language, its basis being *pin* or *pen*, a mountain or rock; whence, among numerous exemplifications, we have the A*pen*nines, the *Pen*nine Alps, and in Portugal the *Pen*ha convent situated on the rocky summit of a mountain. The Gaelic *Pin*widden, like the German *Pyn*-baum, means precisely a mountain tree, than which nothing can be more appropriate. E.)

F. *Calyx* scales forming a cone, two flowers in each scale: *Pistil* one: *Nut* of one cell, without valves, bordered with a membrane.

Are those fraternal four of Borrowdale,
Joined in one solemn and capacious grove;
Huge trunks! and each particular trunk a growth
Of intertwisted fibres serpentine,
Upcoiling, and inveterately convolved:
Nor uninformed with phantasy, and looks
That threaten the profane; a pillared shade,
Upon whose grassless floor of red-brown hue,
By sheddings from the pining umbrage tinged
Perennially;—beneath whose sable roof
Of boughs, as if for festal purpose, decked
With unrejoicing berries, ghostly shapes
May meet at noontide: Fear, and trembling hope,
Silence, and foresight—death the skeleton,
And time the shadow, there to celebrate,
As in a natural temple, scatter'd o'er
With altars undisturb'd of mossy stone,
United worship; or in mute repose
To lie, and listen to the mountain-flood
Murmuring from Glenamara's inmost cave."

The cause of the general introduction of the Yew tree into cemeteries has been differently surmised. The following explanation seems sufficiently probable. The sacred, funeral Yew, well calculated to give solemnity to the village church-yard, and from its unchanging foliage and enduring nature, fit emblem of immortality, has ever been associated with religious observances. When anciently it was the custom, as it still is in Catholic countries, to carry palms on Palm-Sunday, the Yew was substituted on such occasions for the palm. Two or three trees, the usual number growing in church-yards, were enough for such purposes. Of these, one at least was more especially consecrated, and was then estimated at twenty times the value of less hallowed trees of its own kind, and double that of the finest oak, as appears from ancient record. An extract from Caxton's directions for keeping Feasts all the year, printed in 1483, may be considered decisive on this subject In the lecture for Palm-Sunday, the writer, after giving the scripture account of our Saviour's triumphant entrance into Jerusalem, proceeds thus: "Wherefore holy chirche this day makyth solemne processyon, in mynd of the processyon that Cryst made this day. But for encheson that we have non olyve that berith grene leef, algate therefore *we take Ewe instede of palme and olyve*, and beren about in processyon, and so is thys day called Palme Sunday." In confirmation, we may add, that the Yews in the church-yards of East Kent are at this day called *palms*. Small branches were likewise wont to be borne at funeral solemnities, and cast into the grave. It is remarkable that bodies interred beneath the shade of trees, return to their pristine dust in a very few years, perhaps one third less time than when deposited in the open ground. This rapid decay may be in some degree occasioned by the perpetual percolation of concentrated moisture, and the comparative absence of sun and air. That our mortal remains should be laid to rest beneath such natural canopy, seems almost an inherent propensity in human nature.

"This branch of *Yew*, this branch of *Yew*!
  How many a fond and tearful eye
Hath hither turned its pensive view,
  And through this dark leaf sought the sky.
How many a light and beauteous form,
  Committed to its guardian trust,
Safe housed from life's tumultuous storm,
  Hath gently melted into dust,
While mindful love, would long renew
Its grief, beneath this branch of *Yew*.

P. SYLVES'TRIS. Leaves in pairs, rigid: cones egg-conical, mostly in pairs, as long as the leaves: scales oblong, blunt.

More meet to deck the lowly grave
These living plumes by nature spread,
Than sable tufts that proudly wave
Their pompous honours o'er the dead.
The oak hath doffed his leafy pride,
As frowning winter passed him by;
The grass hath shrunk, the flowers have died,
Beneath bright summer's burning sky;
But all to love and sorrow true
Unblenching waved this funeral *Yew*.

I had not from the mounds below
Thus born their beauteous canopy,
But life has many a secret throe,
And sad remembrance many a sigh;
And oh! tis sweet in hours of toil,
Amid the throb of struggling grief,
To rest the aching eye awhile
Upon this dark and feathery leaf;
And think how softly falls the dew
On peaceful graves beneath the *Yew*.

This branch of *Yew!* its tints deride
The sparkling glow of early bloom;
It tells of youth and martial pride
Commingling with the dreary tomb;
It throws upon earth's pageantry
A shadow deep as closing night,
And sweetly lures the awe-struck eye
To rays of life and fields of light;
And stars of promise burst to view,
Through thy dark foliage, mournful *Yew!*"

A statute of Edward I. (1307), contains the following passage; "Ne Rector arbores in cemetrio prosternat:" which must have referred chiefly to Yew trees, thus protected, partly to prevent their injuring cattle, (as unfit for general exposure from their noxious qualities), but chiefly with the intentions above specified; and possibly, (though by no means a primary consideration as sometimes imagined) as ensuring an essential supply to the archer in time of need. The use of Yew for this latter purpose is of very ancient date:

——— "Ityræos *Taxi* torquentur in arcus." Virg.

"The sacred *Yew*, so fear'd in war."

And Homer describes the inhabitants of Crete, as

"Cydonians, dreadful with the bended *Yew*."

But no nation was more terrible by the aid of this weapon, than our athletic ancestors,

——— "Who drew,
And almost join'd, the horns of the tough *Yew*;"

And again,

"The *Eugh* obedient to the bender's will." Spenser.

Indeed so much strength was requisite in drawing these long-bows, that the stout yeomen of the olden time were wont to boast that none but an Englishman could bend them. At that early period, before the invention of gunpowder, it is obvious the church-yards did not supply our warriors with the necessary materials, but that the timber was of foreign growth. In the reign of Elizabeth, a bow of the best foreign Yew was sold for 6s. 8d., while the price of one made of English Yew was only two shillings. In 12 Edward IV. it was ordained that every foreign merchant who should convey any goods from any country from which bow-staves had formerly been brought to this country, should for every ton of goods bring four bow-staves. A similar law was framed in the time of Richard III. In those iron ages the bow triumphed over the spear, the shield, and the sword.

(*Lambert Pin. t.* 1. E.)—*Fl. Ross.* II. *f.* I. i.—(*E. Bot.* 2460. E.)—*Mill. Ill.*—*Blackw.* 190—*Hunt. Evel.* 260; i. *p.* 274. *Ed.* ii.—*Woodv.* 207.—

Dexterity in the use of the "bended *Yew*," decided the battles of Cressy, Poictiers, and Azincourt. By this simple instrument was the flower of chivalry slaughtered or dispersed, and even the men at arms, encased in mail, vainly endeavoured to stand before it. In the latter momentous contest, it stands recorded, that, "the enemy's cross-bow-men, after the first but too hasty discharge in which they hurt very few, retreated from the *fear of our bows*." "The warlike bands of archers, with their strong and numerous volleys, covered the air with clouds, shedding, as a cloud laden with a shower, an intolerable multitude of piercing arrows, and inflicting wounds on the horses, which either threw the French horsemen, who were arrayed to charge them, to the ground, or forced them to retreat; and so their dreadful and formidable purpose was defeated." And further, after an impetuous charge of the French nobility to seize the English standards; "Then the battle raged very fiercely, and *our archers pierced the flanks with their arrows*, and continually renewed the conflict." (Nicolas. Elmham.) Nor are we less indebted to the bow, for domestic service good and true; as over the Scots at Hamildon; and, (1162), temp. Hen. II. when Ireland was chiefly subdued by that instrument, with which the Irish were unacquainted. But of deadly feuds and border affrays, sustained by this weapon, none has been better sung than the encounter of Earls Percy and Douglas:

"The English earl, not fearing this,
Did to the woods resort;

With fifteen hundred bowmen bold,
All chosen men of might,
Who knew full well in time of need,
To aim their shafts aright.

Lo! yonder doth Earl Douglas come,
His men in armour bright;
Full twenty hundred Scottish spears
All marching in our sight.

Our English archers bent their bows,
Their hearts were good and true;
At the first flight of arrows sent,
Full three score Scots they slew."

For individual deeds of prowess with the same weapon, we must refer to the fine old ballad of Chevy Chase.—Enough has been stated to prove that the Yew tree, whether viewed in connection with the arts of war or peace, or associated with more sacred sentiments, as an adjunct to the village church

"That points with taper spire to heaven,"

is deserving of every respectful consideration, and should be esteemed as one of the most interesting of our native productions. The Surry hills near Reigate, and in the neighbourhood of Dorking, were, temp. C. II. clothed with Yew and box. Lightfoot describes the remains of an ancient wood of Yew at Glemire, near Glencrenan, in Upper Lorn; whence the name of the spot, Gleanuir, the valley of Yew trees. A decisive proof of this tree being justly considered aboriginal arises from its having been found buried in peat mosses; as in those of Matterdale and Patterdale; where, according to Hutchinson, large pieces still retain their beautiful red colour. Since Yew trees have been preserved in church-yards from time immemorial, one, at least, being ycleped "the *consecrated* Yew,"

—— "Which in the place of sculptur'd stone,
Marks out the resting place of men unknown." Churchill.

there we may expect to find some of the finest specimens,

—— "Casting
Drear shadows on the fairer trees and flowers,—
Affection's latest signs."

In Aberystwith church-yard, among other large ones, is one 24 feet in girt: at

Barr. 729—*Tourn.* 355, 356, *P. Q.*—*Matth.* 98—*Ger.* 1175. 2—*J. B.* i. *b.* 253—*Dod.* 860. 1—*Lob. Obs.* 631. 2, *and Ic.* ii. 226. 2—*Ger. Em.* 1356. 1.

(Barren and fertile flowers sometimes observable upon different trees. Oelhav. Young *cones* stalked, recurved; afterwards hard and woody, the numerous scales finally starting asunder. Crest of the *anthers* very small. *Style* one to each germen. *Stigma* prominent, obtuse, evanescent. Sm. An evergreen, sub-conical, straight tree, seventy to eighty feet high, sending forth horizontal branches, and maintaining constantly a dismal dark glaucous green foliage. *Stem* reddish brown, the bark scaling off in thickish plates. *Leaves* very straight, and slender, strap-shaped, rigid, smooth, channelled on the upper surface, convex underneath. E.)

SCOTCH FIR. (WILD PINE. Irish: *Crann Guivhais.* Welsh: *Pinwyaden wyllt.* Gaelic: *An Guithas.* E.) Highland mountains, both scattered, and in natural forests of many miles extent. Lightfoot.

T. May.*

Aldworth, Berkshire, one of prodigious bulk, at four feet from the ground measuring nine yards in circumference: in Selborne church-yard one 24 feet in girt: in Totteridge do. one 32 feet. It is particularly valuable to cabinet makers and inlayers: in Germany stoves are wainscotted with this material. Evelyn. A large sound Yew-tree has been sold for one hundred pounds. It is said to attain the age of four hundred years or more. E.)

* The Fir flourishes best in a poor and sandy soil. (In Ireland much of this tree is found in the bogs, and the wood beaten into strings, combed and spun, is thus manufactured into ropes capable of resisting the weather longer than those made from hemp. The fishermen of Loch-Broom, in Ross-shire, convert the bark to similar purposes. Forests of Fir have been discovered imbedded in various parts of England, especially in the mosses of the north, and as forming a substratum to Roman roads over bogs. Fir timber is frequently dug up in the peat-bogs of Anglesey. On sinking the outlet of a lake called Llyn Llwydiart, in the parish of Pentraeth, some venerable remains have lately been discovered, as stumps of uncommon size, &c., worthy the inspection of the intelligent tourist. Rev. Hugh Davies. Cæsar asserts the Fir not to be a native of Britain: "Materia cujusque generis, ut in Gallia, præter Fagum et *Abietem.*" Of the Beech we have already treated. To the Fir, the claim of this country may be still more clearly established. Probably the earlier campaigns of the Roman conqueror did not afford an opportunity of contemplating this tree in its primary stations: but, according to the ingenious arguments of Mr. Whitaker in his History of Manchester, the Fir is perpetually discovered in such of our mosses as were demonstrably extant prior to the settlement of the Romans among us; among the many Roman names for the Fir in the British language, there are three which are purely and absolutely British; and further, Firs actually appear as early as the third century in the unromanized regions of Caledonia and Ireland, as the acknowledged aborigines of the country: e. g. the tomb of a fallen warrior, upon the western shore of Caledonia, is thus described from the reality by the bard: "Dost thou not behold, Malvina, a rock with its head of heath? Three aged *Firs* bend from its face; green is the narrow plain at its feet." These facts must prove irresistible, even against ancient classical authority. Some antiquaries have imagined that Cæsar referred to a species of Pine larger than our common Fir, and which Irish tradition represents as having been introduced into these islands by the Danes; on whose expulsion, the mal-treated "*incoles*," wreaked their vengeance even upon these harmless mementos of their subjugation. But such subterraneous strata of Bog Fir are not peculiar to the sister island, (where the bogs of Glancullen alone supply Dublin with fuel), for they exist also in both North and South Britain; and it is scarcely to be conceived that three nations, however barbarous, should simultaneously be impelled to so absurd a mode of displaying their resentment. *Cenangium (Peziza) ferruginosum*, Grev. Scot. Crypt. 197. "Gregarious, between membranaceous and leathery, subsessile, rugose, somewhat pruinose, reddish-black, the orifice compressed, inflexed, when moist spreading, the disk yellow:" may often be found covering the greater part of a fallen Fir tree. *Ips piniperdus* assists

in decorticating the Fir; feeding beneath the bark. The most sterile lands of Scotland have been rendered valuable by extensive Fir plantations, which have also tended to increase population. Though the Fir be, for general purposes, of less value than the Larch, (the "*lignum immortale*" of Pliny, which may be cultivated with as little trouble, we shall insert one experiment from Dr. Hunter for the encouragement of patriotic planters. Crooksbury Heath, Surry, consists of 3,700 sandy acres. In 1776 twelve acres were planted with Scotch Firs, four years old, at the distance of four feet, the ground in no way prepared. In 1788 the plants were thinned, being then about the height of fourteen feet, and produced eight pounds per acre. The thinnings were sold for hop-poles, and the branches were made into bavins for burning lime. Such hop-poles have been proved to be perfectly sound after nine years' use. The second thinnings took place in 1794, when the trees were converted into scantlings and rafters, being about 40 feet in height. The number of trees then left standing upon the twelve acres was 18,531, valued at 573*l*. Frigates have been built of Fir-wood; but it possesses too little tenacity for such purpose, and splinters so dangerously in action that its use has been discontinued. The ancients were accustomed to appropriate it to the same purpose, and with better effect, before the use of artillery;

——— "Dant utile lignum
Navigiis *Pinos*:" Virg.

An intermixture of Firs with young Oaks has been found to protect and encourage the growth of the latter very advantageously,

"Et comitem Quercum *Pinus* amica trahit;" Claudian.
The friendly *Pine* the mighty Oak invites:

and may be thinned out when in danger of interfering with, or drawing up, the more valuable timber trees. E.) In a grove, the trunk becomes tall and naked; (suitable for masts of ships and scaffold poles; E.) in sunny open places, branched. On rocks or bogs, it seldom attains a large size. In black soil it becomes diseased, and in chalky land it dies. Sometimes it will thrive near running, but never near stagnant, waters. None but the terminal buds send forth branches, therefore it will not bear the least clipping. The roots spread very near to the surface of the earth, all but the central root, which grows directly downwards; and if this be broken off, or interrupted in its passage by rocks, the stem ceases to shoot upwards, and the tree remains a dwarf. Upon this account it is apt to suffer by transplanting. This tree furnishes us with the best red or yellow deal. It is smooth, light, and easily cloven. The inhabitants of the North of Europe make bread from this tree, (probably resembling that from Cassava, the Yucca root, a bad thing *per se*, but by no means obnoxious when flavoured with pine jam; verb sap.) in the following manner: They choose a tree whose trunk is even, for these contain the least resin, and strip off the bark in the spring when it separates most readily. This they first dry gently in the shade; then in a greater heat; and reduce it to powder. With this powder they mix a small quantity of corn meal, and with water knead it into bread. This they eat, not only in years of scarcity, but at other times, from an apprehension that long disuse might render it disagreeable to them. Devoutly were it to be wished that human beings should never be driven to such sad necessity of thus robbing even the swine, which are said to grow fat upon this keep. Their children are very fond of the fresh bark in the spring time, either shaved with a knife or grated with a rasp; (truly a miserable substitute for wholesome farinaceous food; but

"De gustibus non est disputandum."

The tops of the branches are also mixed with oats as provender for horses. E.) The young shoots distilled afford a fragrant essential oil. (The bark is used with much success for tanning. An infusion of the buds has been recommended as an antiscorbutic; as are the fresh cones boiled, which also are a principal ingredient in spruce beer. The air impregnated with the balmy exhalation of Fir trees has been supposed wholesome for delicate lungs. Dr. Clarke describes the mode of obtaining tar from the roots as now practised by northern nations to be exactly similar to that of the ancient Greeks. "The Fir," observes that author, "appears to constitute the *summum bonum* of the Norwegian peasants; affording materials for building their houses, churches, and bridges; for every article of their household furniture; or constructing sledges, carts, and boats; besides fuel for their hearths. With its leaves they strew their floors, and afterwards burn them, and collect the ashes for manure." E.) Sheep and goats are not fond of it; horses refuse it. —(The bark of the Fir apple is a principal food of *Loxia curvirostra*, or Cross-bill; and thus are many seeds disengaged from their scaly covering, and committed to the earth. E.) It affords nourishment to *Phalæna Pini*, *quadra*; *Curculio Pini*, and *Cimex Abietis*. (*Aphis Pini* converts the buds or young shoots of the Fir into a very beautiful gall, somewhat resembling a Fir-cone, or a pine-apple in miniature. And a species of *Chermes* sometimes produces an enormous scaly protuberance at the summit of the branches, and formed by the extravasation of the juices occasioned by punctures made in order to deposit their eggs. The young larvæ shelter themselves in cells contained in the tumour. Barbut. It has lately been ascertained that Fir-trees are liable to be absolutely destroyed by the perforations of *Sirex juvencus*, as the woods at Henham-hall, Suffolk, testify. Vid. Linn. Tr. xiv. 584. *Noctua Pinastri* deposits larvæ in the leading buds, often perforating the young shoots, and thus depriving the tree of its leader. And here must be introduced *Achatia spreta*, Curt. vol. 3. pl. 117. (*Noctua Piniperda*, *Kob*), a moth whose larvæ totally consumes the foliage, (which the green-striped caterpillar singularly resembles), occasionally ravaging even extensive forests. The magnificent and rare insect *Odonestis Pini* (Curt. Brit. Entom. vol. 1. pl. 7.) also feeds upon the Scotch Fir:—and the Pine forests of Scotland are the most productive places for the uncommon *Lophyrus Pini*, (also *L. pallidus*), Curt. vol. 2. pl. 54; whose larvæ are gregarious, assembling in numerous troops on the branches, and not only devouring the leaves of the Pine, but also the bark of the young shoots.—The leading branches are likewise destroyed by the beetle *Hylurgus piniperda*, Curt. pl. 103. where the process is fully detailed and illustrated. Phillips, in Sylva Florifera, observes that the leaves and branches of the Scotch Fir afford wholesome nourishment cattle and sheep, which is no small consideration in mountainous countries, where the snow lies for months together. The resinous roots are dug out of the ground in the highlands, and, being divided into small splinters, are used instead of candles, (a custom not peculiar to northern nations, being, according to Sir W. Ouseley, equally prevalent at Bedrowâs in Turkey. E.) "Fishermen make ropes of the inner bark. Tar and pitch are obtained from the trunk and branches; the juice being received in trenches made in the earth, is afterwards freed from impurities by colature through wicker baskets, They also yield turpentine and resin:

"The *Firre* that oftentimes doth rosin drop."

Every part of these trees displays infinite wisdom in its formation, which is so peculiarly adapted to the native mountains. The resinous juices with which the trunks and branches abound, defy the rigour of the frost to congeal the sap, whilst the filiform nature of the leaves of these evergreens are not less happily adapted for resistance to the impetuosity of the winds, that beat with such violence on elevated situations. As these trees were designed by nature for perpetual winter, their foliage possesses the farther advantage of reverberating the heat, like the hair of animals.

Mr. Salisbury mentions that plantations of Firs, of twenty-five years' growth, on the South Downs, have been sold at a price which averaged a profit of twenty shillings per annum per acre, on land usually let for sheep pasture at not one fourth that value. Loudon considers the self sown Highland Pine equal to any foreign timber of the kind. the Lowland, and *planted*, fit only for roofing, lining of carts, lathing, packing boxes, and inferior purposes. On the elevated moors between Blackland, at the head of the Derwent, and Wolsingham, on the river Wear, and even on the mountains of Cross Fell at an elevation of nearly 3,000 feet, the roots and trunks of very large Pines are seen protruding from the black peat moss, being exposed to view by the water of these bogs having drained off and left the peat bare; but this tree is no longer indigenous there. The Scotch Fir, even though protected and planted on a lower level, does not at this day attain the size of these ancient Pines. In favourable situations, as by the Eden at Corby, in Cumberland, some large trees may be noticed; but on moorland soils, where it formerly flourished, it seldom thrives after thirty or forty years of age, and spreading its roots horizontally, it is very liable to be blown up by violent winds." Winch Geog. Few have ventured to advocate the appearance of the commonly despised Scotch Fir; but Gilpin pronounces it, when in perfection and standing singly, not unworthy of attention even as a picturesque object. "For myself," says that amiable writer, "I admire its foliage; both the colour of the leaf and its mode of growth. Its ramification too is irregular and beautiful; and not unlike that of the Stone Pine ; which it resembles also in the easy sweep of its stem ; and likewise in the colour of its bark, which is commonly, as it attains age, of a rich reddish brown. In its stripling state indeed it is less an object of beauty, its pointed and spiry shoots being then too formal."—"Some of the most picturesque trees of this kind perhaps in England, adorn Mr. Lenthall's deserted mansion at Basilsleigh, in Berkshire." p. 88. Stoddart states that Mr. Farquharson has planted on his estate of Invercauld no less than sixteen millions of Fir; and that in the natural woods are some very ancient ones, "above one hundred feet in straight height. They were much more numerous; but having been injudiciously thinned, the wind forced its way among them, and in one night laid most of the veterans low. The natural beauty of the individual tree has been greatly undervalued ; but surely when planted on so broad a scale, their effect is peculiarly adapted to augment the grandeur and majesty of these vast hollows. At Invercauld, as at Glenmuir, the mountains seem to be divided by a dark sea of Firs, whose uniformity of hue and appearance affords inexpressible solemnity to the scene, and carries back the mind to those primeval ages, when the axe had not yet invaded the boundless regions of the forest." ii. 167. However the sylvan produce of Scotland may have been disparaged by a partial and prejudiced view, experience proves that the various kinds of timber raised in such exposed situations, are thereby rendered decidedly superior both in texture and enduring quality, to what may be obtained more rapidly, and of some sorts perhaps with greater certainty, in the lowlands of England. Pliny remarked that timber which grew in moist and sheltered situations was less compact and durable, than when reared under opposite circumstances : and Homer, for the same reason, assigns to Agamemnon a spear formed of a tree which had braved the fury of the tempest.

"Yon verdant *Pines*, that midst the winter smile, (*grimly*, it must be admitted),
Offspring of Scotia's or Virginia's soil." Delille.

Indeed it is in the Highlands of North Britain that we must look for "this magnificent tree," as Dr. Greville terms it, "where it is truly wild, and differing as much from the formal ornament of the plantation, as the hardy mountaineer from the sedentary mechanic of a crowded city." The sprig of a favourite plant often constitutes the badge of respective chieftains, and as such we find this mountain tree appropriated, in the Lady of the Lake, to the Clan-Alpine.

"Hail to the chief who in triumph advances !
Honoured and blessed be the evergreen *Pine !*
Long may the tree in his banner that glances
Flourish, the shelter and grace of our line ! "

Interesting particulars respecting the Scotch Fir may be read in Evelyn's Sylva, and Phil. Tr. No. 275—277. See also Library of Entertaining Knowledge, vol. ii. p. 34, with a fig. E.)

CLASS XVII.

DIADELPHIA.

HEXANDRIA.

FUMARIA. *Cal.* two leaves: *Bloss.* gaping, gibbous at the base and containing honey: each *filament* bearing three anthers.

OCTANDRIA.

POLYG'ALA. Two segments of the *calyx* like wings: *Bloss.* standard cylindrical: *Stamens* all connected at the base: *Caps.* inversely heart-shaped, two-celled.

DECANDRIA.

(1) *Stamens all united.*

SPAR'TIUM. *Filaments* adhering to the germen: *Summit* hairy, attached to the upper side of the style.

GENIS'TA. *Pistil* depressing the keel: *Summit* terminal, somewhat capitate.

ANTHYL'LIS. *Cup* swollen and turgid, inclosing the legumen.

U'LEX. *Calyx* two-leaved: *Legumen* scarcely longer than the calyx.

ONO'NIS. *Legumen* diamond-shaped, sessile: *Standard* scored.

(2) *Summit downy; Filaments nine united, one distinct.*

O'ROBUS. *Style* slender, nearly cylindrical: *Stigma* pubescent on the upper side.

PISUM. *Style* keeled, pubescent above.

LATH'YRUS. *Style* flat, downy above.

VIC'IA. *Style* bearded under the *summit.*

(3) *Legumen two-celled.*

ASTRAG'ALUS. *Legumen* two-celled, curved, tumid.

(4) *Legumen with about one seed.*

TRIFO'LIUM. *Legumen* scarcely longer than the calyx, with one or two seeds: flowers mostly capitate.

[Medicago lupulina. Hedysarum Onobrychis.]

(5) *Legumen almost jointed; sometimes spiral.*

HEDYS'ARUM. *Legumen* with roundish, compressed joints: *Keel* very obtuse.

ORNI'THOPUS. *Legumen* jointed, bent like a sickle.

HIPPOCRE'PIS. *Legumen* compressed, incurved, membranous, one of the seams with several deep notches.

MEDICA'GO. *Legumen* spiral, membranous, compressed: *Pistil* pressing down the keel.

(6) *Legumen of one cell, with two or more seeds: (without the marks of the former subdivisions.)*

ER'VUM. *Cup* with five divisions, nearly equal, and nearly as long as the blossom: (*Stigma* capitate, hairy on all sides: E. bot. E.)

LO'TUS. *Legumen* cylindrical, spongy within: *Wings* converging upwards.

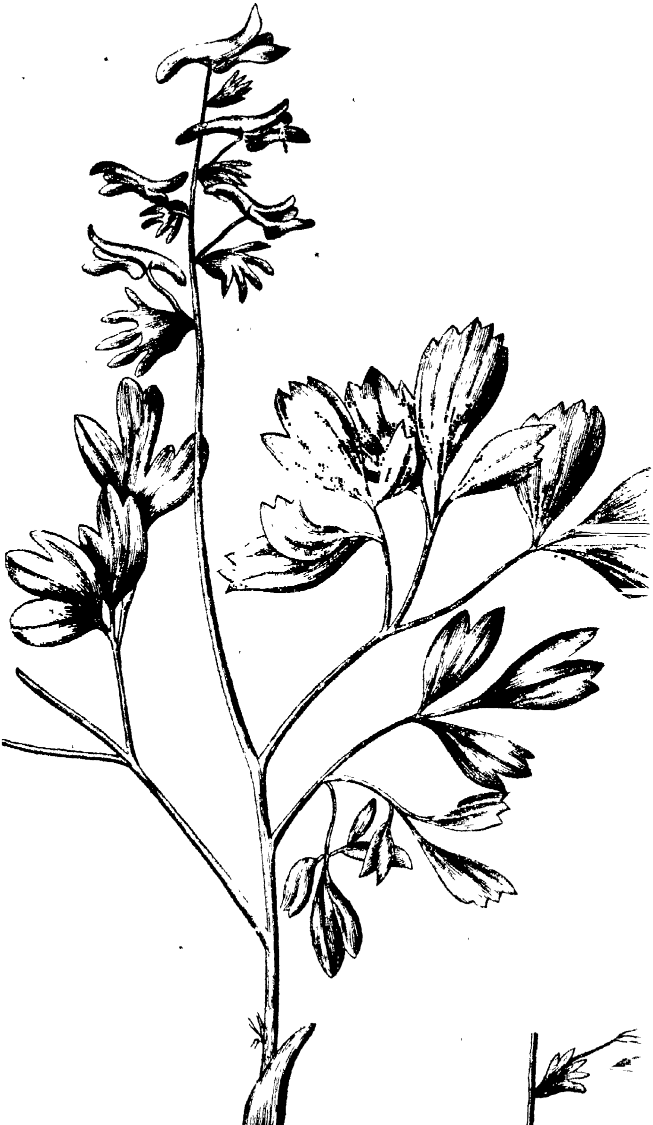
Linnæus also gives the following Natural Arrangement of the different genera.

Winged without an odd Leafit. *Orobus, Pisum, Lathyrus, Vicia, Ervum.*

Winged with an odd Leafit. *Astragalus, Hedysarum.*

With three Leafits. *Trifolium, Lotus, Medicago, Genista, Ononis.*

Flowers in Umbels. *Lotus, Ornithopus, Hippocrepis.*



Fumaria (intermedia Ed. 6) solida.

HEXANDRIA.

FUMA'RIA.* *Calyx* two-leaved: *Bloss.* ringent, gibbous at the base, nectariferous: *Filaments* two, membranous, each supporting three anthers.

(F. SOL'IDA. Root bulbous, solid: stem simple: leaves biternate: floral-leaves hand-shaped, longer than the flower-stalk. E.)

(*E. Bot.* 1471—*Curt. Mag. t.* 231. E.)

PLATE XXIX.

Stem solitary, a span high, upright, a little zigzag, leafy, smooth, bearing a lanceolate sheath at the bottom. *Leaves* two or three, alternate, on stalks, smooth, twice ternate, cut. *Spike* solitary, terminal, simple. *Spur* cylindrical, bluntish. E. Bot. E.) *Flowers* purplish red and yellow, forming a loose spike. *Floral-leaves* divided into finger-like segments. *Seed-vessel* oblong-egg-shaped, opening at the bottom, four to six *seeds* in each.

(SOLID BULBOUS FUMITORY. *F. solida.* Linn. Curt. Sm. *F. bulbosa* β and γ. Linn. *F. intermedia.* With. Ed. 3 and 4. Hull. E.) First sent to me by Mr. Hall, secondly by Mr. Gough, and afterwards by Mr. Robson The former found it in Levans Park, five miles from Kendal. Wattsfield, half a mile from Kendal, amongst a clump of tall trees, plentiful. Mr. Gough. Near Ulverstone; also between Cartmel and Kendal. Mr. Robson. At Perry Hall, near Birmingham, in a meadow between the house and the river. Mr. Pitt. (At Blithfield, Staffordshire. Hon. Mr. Bagot. In a wood at Wickham, near Fareham, Hants. Rev. T. Garnier. Woods near Studley, Warwickshire, and abundant in the orchard at Studley castle. Purton. Abberley woods, Worcestershire. Hickman, in Mid. Fl. E.) P. March—April.

(F. LU'TEA. Legumens nearly cylindrical, shorter than the peduncles: stems angular, with very small bracteæ: spur short. E.)

(*E. Bot.* 588. E.)—*Kniph.* 11.

(*Stems* scarcely a foot high, upright, smooth, reddish, leafy. *Spur* very short, rounded at the end. It differs from *F. capnoides* of Linnæus in being perennial, the blossoms of a deeper yellow, the spur rounded at the end, not awl-shaped; the pod only half the length, nearly cylindrical, not three sided. Fl. Brit. E.)

YELLOW FUMITORY. *F. capnoides.* With. Ed. 3. First found in England by Mr. Howard, growing on old walls near Castleton in Derbyshire. (Holmhead near Giggleswick, Yorkshire, growing wild in great abundance. Mr. Gough. Fountain's Abbey. Mr. Robson. On old walls near Marple, four miles from Stockport. Mr. Holme, Bot. Guide. Walls at Nether-Witton, Northumberland. Winch Guide. Broadway Hills, Gloucestershire. Rev. W. Rufford, in Purton. On walls in Mellos' lane, and St. Mary's church-yard, Warwick. Perry. At Brislington, and other spots near Bristol. P. E.)

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* (Possibly from *fumus*, smoke; the plant having been designated *Fumus terræ*; but for what reason remains doubtful. E.)

F. officina'lis. Seed-vessels in bunches, one seed in each: stem spreading: (leafits with dilated segments. E.)

Ludw. 83—*Curt.* 112—(*E. Bot.* 589. E.)—*Matth.* 1158—*Riv. Tetr.* 1—*Kniph.* 1—*Woodv.* 88—*Fl. Dan.* 940—*Fuchs.* 338—*J. B.* iii. *a.* 201—*Blackw.* 237—*Walc.*—*Ger.* 927. 1—*Lonic.* i. 166. 2—*Dod.* 59—*Lob. Obs.* 437. 3, *and Ic.* i. 757. 1—*Ger.* 1088. 1—*Park.* 287. 1—*Trag.* 110—*Mill.* 136. 2—*H. Ox.* iii. 12. 9.

Stem smooth. *Leaves* smooth, somewhat fleshy, sea-green, trebly compound, the last divisions with three or five clefts, the extreme segments spear-shaped. *Fruit-stalks* very short. *Floral-leaves* spear-shaped, membranous, one at the base of each fruit-stalk. *Seed-vessel* roundish, smooth. Woodw. *Calyx* leaves coloured. *Nectary* distended, shorter than the fruit-stalk, inclosing a greenish tongue-shaped substance, purple at the edge. *Wings* each with three keel-shaped ridges near the extremity on the outer side. *Style* three or four times as long as the germen. *Flowers* pink and dark purple, in long terminal spike-like bunches; sometimes very pale, or nearly white.

Common Fumitory. (Irish: *Cuman Searraigh; Ditagh talhum.* Welsh: *Mwg y ddaear cyffredin.* E.) Corn-fields; hedge banks; gardens.
A. May—Aug.*

(**F. parviflo'ra.** Cluster diffuse: pods single-seeded, globose, pointed: stem spreading; segments of the leaves strap-shaped, channelled.

E. Bot. 590—*Vaill. Par. t.* 10. *f.* 5.

Exhibits the general habit of *F. officinalis,* but differs in the very narrow segments of the *leaves,* which are linear, grooved, convex beneath, never widening, or becoming wedge-shaped; and the *blossom* being only half the size, and paler. *Pod* acuminate, but not notched at the end.

Small-flowered Fumitory. *F. parviflora.* Willd. Sm. De Cand. *F. spicata β.* Linn. Corn-fields about Woldham; near Rochester. Mr. Jacob Rayer. Near Epsom. Mr. T. F. Forster, jun. Fl. Brit. Teignmouth. Rev. Pike Jones. A. Aug.—Sept. E.)

F. capreola'ta. Seed-vessels in bunches, one seed in each: leaves climbing, sparingly furnished with tendrils.

Dick. H. S.—(*Curt.*—*E. Bot.* 943. L.,

PLATE XXX.

Stems longer and weaker than those of *F. officinalis.* *Leaves* more distant, not so finely divided, the extreme divisions broader and blunter. *Flo* fewer on the spike. *Fruit-stalks* longer. Woodw. *Stem* sometimes trailing, and interweaving its branches among the grass, very much branched, three feet long. *Blossom* pale red; St. (rarely white. E.) Clearly distinct from *F. officinalis,* as I have proved by sowing the seed. *Leaves*

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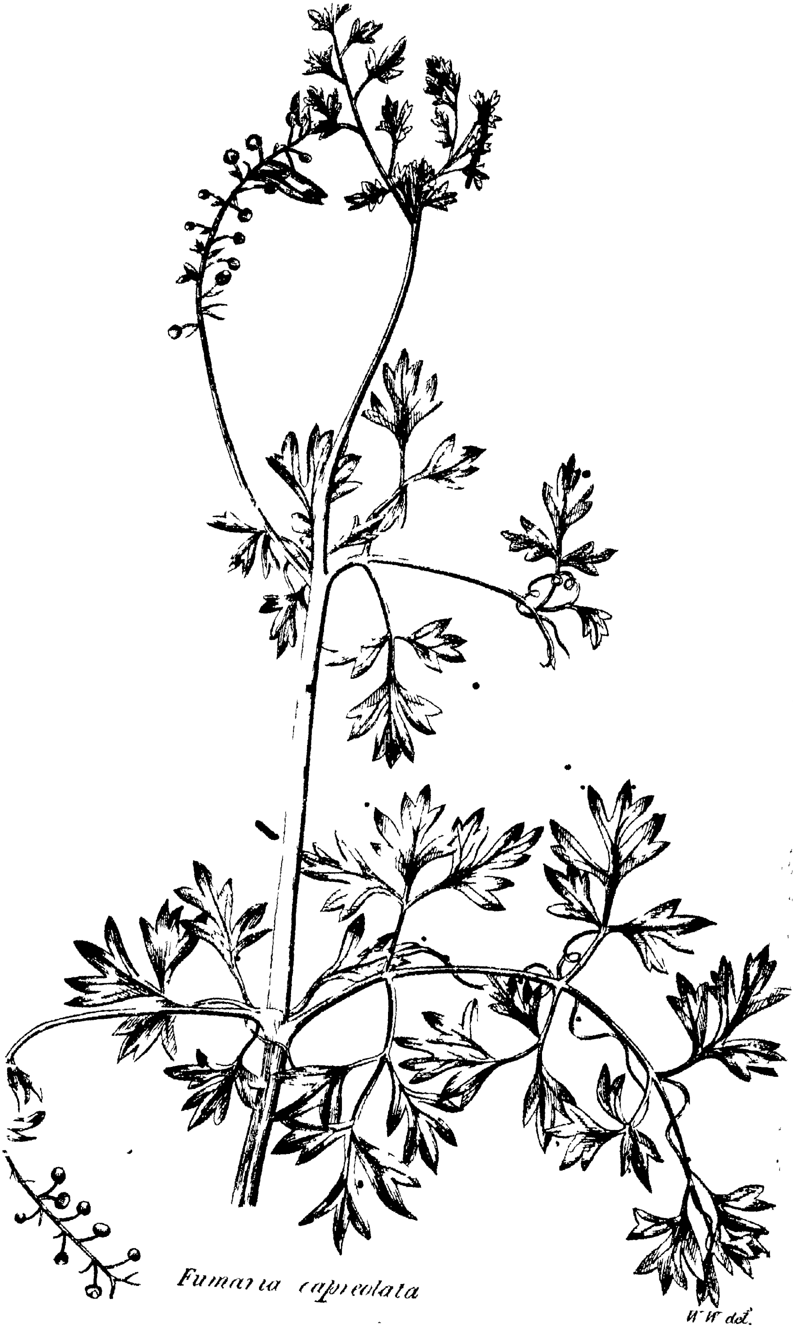
* Cows and sheep eat it. Goats are not fond of it. Horses and swine refuse it. Linn The leaves are succulent, saline and bitter. The expressed juice in doses of two or three ounces, is useful in hypochondriacal, scorbutic, and cachectic habits. It corrects acidity and strengthens the tone of the stomach. Hoffman prefers it to all other medicines as a sweetener of the blood. There is no doubt of its utility in obstructions of the viscera, and diseases arising therefrom.—An infusion of the leaves is used as a cosmetic to remove freckles and clear the skin. Mr. Woodward.



Fumaria capreolata

W W del.

frequently running into tendrils. Robs. (*Seed-vessels* globular. We would willingly correct our representation of this plant, but, on again comparing it with specimens, are not aware of the small error noticed in E. Bot. 943. Whether the few tendrils be considered as distinct from the twisting footstalks or not, they are accurately delineated in the annexed plate. E.)

Ramping Fumitory. (Welsh: *Mwg y ddaear afreo-lys.* E.) Gardens, cultivated ground, and under walls with *F. officinalis.* Rocks by the sea side; ditch banks. (Frequent about Liverpool. Dr. Bostock. In hedges about Gateshead and Monk-Wearmouth. Winch Guide. At Llangefni, Anglesey. Welsh Bot. About Red hall, near Edinburgh. Lightfoot. Abundant in Cornwall and Devon. E.) A. Aug.—Oct.

F. **claviculа'ta.** Legumens strap-shaped, about three-seeded: leaves with tendrils.

Fl. Dan. 340—*E. Bot.* 103—*Dod.* 60—*Lob. Obs.* 438. 2, *and Ic.* i. 758. 1—*Ger. Em.* 1088. 2—*J. B.* iii. *a.* 204. 1—*Park.* 288. 6—*H. Ox.* iii. 12. 3—*Ger.* 929. 5 *and* 6.

Tendrils generally forked, sometimes with two minute leaves near the end. *Stems* angular, slender, climbing, two or three feet long, purplish at the base. *Leafits* egg-spear-shaped, ending in a sharp flexible point. *Spikes* towards the top of the stem or branches, of about five flowers, seldom more than two of which come to perfection, lateral. *Calyx-leaves* inversely heart-shaped, white, very small. *Blossom standard* oblong, concave, reflexed at the end, not notched. *Nectary* blunt. *Keel* a little concave at the top, and reflexed at the edges. *Filaments,* one fixed to the standard, the other to the base of the two wings, and uniting them. *Germen* heart-shaped. *Style* crooked. *Summit* flat, and ragged. *Seed-vessel* oblong, tapering, with one to three seeds. The shape of the *seed-vessel* distinguishes this from the two preceding species. *Flowers* small, greenish, yellowish white, or sometimes with a purple tinge.

White Climbing Fumitory. (Welsh: *Mwg y ddaear gafaelgar. Corydalis claviculata.* De Cand. Grev. E.) Woods and moist hedges, boggy and rocky places, in sandy soil, and on the banks of lakes and rivers. Among the rocks of Stonehall, near Rawdon, seven miles from Leeds. Mr. Wood. Thorpe, near Norwich. Mr. Woodward. In a marsh on the east side of Kendal castle. Mr. Gough. Thatched cottages in many parts of the Highlands of Scotland covered with it. Mr. Brown. Among loose stones on the north-east side of the Wrekin. Salop. Mr. Aikin. Dry stony places in Furness Fells. Mr. Atkinson. On Malvern Hill, above the spring. In some of the least frequented lanes about Birmingham. On the south side of Carn ynghornwy, Anglesey. Welsh Bot. (Knot's Hole, near Liverpool; Lady's Isle, Loch Katrine. Dr. Bostock. In the field, near a small pond, on the east side of Willesboro' Leas, Kent. Mr. G. E. Smith. Among bushes on Newcastle Town Moor, Northumberland. Winch Guide. Abundant in hedges by the road side near Llangollen from Chirk. E.) A. June—Sept.

OCTANDRIA.

POLYGALA.* *Calyx* five-leaved, two larger leafits wing-like, coloured: *Caps.* inversely heart-shaped, two-celled: *Seeds* solitary, (crested. E.)

P. VULGA'RIS. Flowers crested, in terminal bunches: stems herbaceous, simple, procumbent: leaves strap-spear-shaped.

Walc.—*Fl. Dan.* 516—*Kniph.* 11—*E. Bot.* 76—*J. B.* iii. 386. 3 *and* 4—*Dod.* 253—*Lob. Obs.* 228. 1, *and Ic.* i. 416. 2—*Ger. Em.* 564—*Park.* 1332. 2—*Trag.* 571—*Lonic.* i. 183. 1—*J. B.* iii. 362—*Lob. Ic.* i. 417. 1—*Ger. Em.* 563. 3—*Ger.* 449. 4.

(A pretty little plant, smooth, of a dark shining green. E.) *Stem* angular, undivided, two or three to six or eight inches high, sometimes nearly upright. *Leaves* alternate or in pairs, a little rolled back at the edges, the upper spear-shaped, the lower egg-shaped. *Blossom-wings* spear-shaped, more fully coloured than the calyx; *standard* composed of two petals, joined by a hairiness at the edges. *Keel* cylindrical below, towards the top expanding into two sets of club-shaped glandular appendages. *Filaments* in two sets, four fingers to each. *Anthers* yellow, or orange. *Style* thicker upwards. *Summit* with two lips, the one a fleshy knob, the other spear-shaped, concave. *Seed-vessel* bordered. *Blossom* blue, purple, flesh-coloured, or white.

COMMON MILKWORT. (Irish: *Luss bainne.* Welsh: *Llys Crist; Amlaethai.* E.) Pastures and heaths, common. P. June—July.†

DECANDRIA.

SPARTIUM.‡ (*Filaments* all forming a simple tube: *Stigma* lateral, linear, hairy: *Legume* flat. Sm. E.)

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* (From πολυς, much, and γαλα, milk; having a tendency to increase the milk of cattle feeding on it: or, according to ancient fable, in the breasts of nurses. E.)

† Linnæus found it to possess the properties of the Senega Rattle-snake root, (*Polygala Senega*) but in an inferior degree. Duhamel used it in pleuretic cases with success. Mem. de Paris, 1740. The powdered root may be given in doses of half a dram. Cows, goats, and sheep eat it; swine refuse it. An infusion of the herb, which is very bitter, taken in the morning fasting, about a quarter of a pint daily, promotes expectoration, and is good for catarrhous coughs. I tried it with success. Dr. Smith. (A decoction has been found serviceable in ascites and anasarca; but the medicinal virtues of this plant are as yet far from correctly understood, and experiments should be conducted cautiously, as its effects in disordering the system are sometimes rather violent. E.)

‡ (The Σπαρτιον of Dioscorides, the *Spart* of the ancient Greeks, was rather the *Esparto* grass of Spain and Portugal, of which ropes are now made, equivalent to the hemp of northern climes; than the modern *Spartium*, to which the term may be applied for its utility in furnishing bands to tie vines; but most of the names of this plant have direct reference to its use, as a domestic utensil frequently composed of it,

> The vagrant artist oft at eve reclines,
> And *Broom's* green shoots in besoms neat combines."

And hence it has been inferred that besoms were originally made of *Broom*, and thus denominated. E.)

S. SCOPA'RIUM. Leaves ternate or solitary; branches without prickles, angular.

Curt.—(*E. Bot.* 1339. E.)—*Kniph.* 3—*Riv. Tetr.* 63. 1, *Genista.*—*Woodv.* 89—*Fl. Dan.* 313—*Blackw.* 244—*Sheldr.* 7—*Dod.* 761. 1—*Lob. Obs.* 531. 1, *and Ic.* ii. 89. 1—*Ger. Em.* 1311. 1—*Park.* 229. 1—*Ger.* 1130. 1—*Fuchs.* 219—*J. B.* i. *b.* 388. 3—*Trag.* 961—*Lonic.* i. 39. 2.

Leaves and *leaf-stalks* slightly hairy. *Calyx* the upper segment with two teeth larger than those of the lower. *Blossom standard* nearly circular, slightly notched at the end. *Keel,* the petals rather hooked, united at the lower edge by an intertexture of very fine, soft, woolly hairs. *Stamens,* four long and six short. *Style* bowed almost into a circle, and after flowering into a spiral; the extremity, which one should be inclined to regard as the summit, not hairy. *Blossom* golden yellow, large and showy. (*Branches* numerous, straight, angular, evergreen. *Plant* three to six feet high or more. *Leaves* small, smooth, deciduous. E.)

COMMON BROOM. (Irish: *Gileagh.* Welsh: *Banadlen.* Gaelic: *Bealaidh.* *Genista* of older authors. *Genista scoparia.* Hook. Grev. E.) Dry fields and thickets. S. May—June.*

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* The buds are sometimes preserved as pickles, (and eaten in the manner of capers. The plant, when burnt, affords a tolerably pure alkaline salt. Dr. Mead relates the case of a dropsical patient who was cured by taking half a pint of a decoction of green Broom tops, with a spoonful of whole mustard seed, every morning and evening. The patient had been tapped three times, and tried the usual remedies before. Mon. Med. 138. An infusion of the seeds drank freely has been known to produce similar happy effects. I knew them succeed in one case that was truly deplorable; but out of a great number, in which the medicine had a fair trial, this proved a single instance. A strong lixivium of the ashes was used successfully in the Swedish army in 1759, to cure dropsies consequent to a catarrhal epidemic fever. Med. Com. i. 373. Some use the seeds roasted, so as to make a kind of coffee, (and the tender tops as a substitute for hops. The wood produced by large old plants is ornamental for veneering. The fibres may be obtained by steeping the Broom in water; of these Pliny says the Asiatics made the most enduring fishing nets; though it seems probable the historian might intend *S. Junceum,* more prevalent in those countries, and to this day appropriated to various economical purposes, for which our northern species answers only in a secondary degree. E.) The plant merits a place among our flowering shrubs, on account of the profusion of its golden blossoms. (Cows, horses, and sheep refuse it. Linn. Notwithstanding the assertion of Linnæus that sheep do not eat Broom, it is customary in some parts of Britain to pasture the flocks where it abounds in blossom, and thus, in the opinion of many intelligent farmers, is the disease called the Rot prevented. The same practice is very generally followed in the South of Europe, especially for winter food: though to prevent the stimulating effects of the plant, a good supply of water should always be accessible. Does not the benefit rather arise from the dry and hilly ground on which Broom is usually found? In dropsy to which sheep also are liable, doubtless the plant itself proves salutary, as farmers well know: though Clorin, in the Faithful Shepherdess, sympathizes with

—— "The lazy clowns
That feed their heifers on the budded *Brooms.*"

Orobanche is found attached chiefly to leguminous plants, especially to this (and the following), whence called *Broom*-rape—the latter part of the compound, from the turnip-shaped bulb at the base of its stem. E.) *Phalæna Pisi,* (*Chrysomela Litura, Lamprias chlorocephala, Apion melanopum, Cassida marcida, Haltica orbiculata, Laria fascelina, Geometra rufata,* feed upon it; also, more rarely, *Apion Spartii.* The blossoms yield an abundant supply of honey for bees. E.) When the seeds are fully ripe and the legumen becomes black, it has the power of discharging its contents to a considerable distance (by an expansive *vis elastica,* usually excited by the solar heat. E.) The Rev. James Hall has

GENISTA.* (*Filaments* upwards in two sets: *Stigma* terminal, somewhat capitate: *Legume* turgid: *Pistil* depressing the keel: *Standard* reflexed. Sm. E.)

reported a method of procuring flax from Broom. The process is detailed in Month. Mag. vol. 28, p. 616. This discovery may prove important to the paper manufacturers. This kind of flax has also been bleached and spun with good success. The peasantry, where neither flax nor hemp can be obtained, use no other for making cloth. The remaining twigs are well calculated for carpet *brooms*. In North Britain cottages and ricks are thatched with it; and in certain districts where fuel is scarce, it has been encouraged for that purpose. Who can gaze without delight upon the splendid wreaths of blossom,

"Yellow and bright as bullion unalloy'd?"

More especially if the spectator be acquainted with the Scottish pastorals, ever true to nature, and replete with allusions to "the bonnie, bonnie *Broom*." Indeed the pathetic incidents associated with our oft despised plant, and described with such exquisite *naivete*, prove that these northern Paphian bowers possess an equally magic influence with the famed myrtle groves of more genial climes, and amply attest the ubiquity of all potent love. If the veracity of these tender tales be not impeachable, neither the "Puing of the bracken," nor even "Ower the muir among the hether," ever proved more productive of perilous adventure than the spot, where

"Down among the *Broom* the *Broom*,
Down among the *Broom*, my dearie,
The lassie lost her silken snood,
That gard her greet till she was wearie."

And what can be more touching than the lament while absent from all such rural joys,

"More pleasing far are Cowden knows,
My peaceful happy home,
Where I was wont to milk my ewes
At ev'n among the *Broom*."

In a burst of genuine patriotism, yet not forgetting the ruling passion, Burns happily celebrates these favourite haunts of love and poesy.

"Their groves of sweet myrtle let foreign lands reckon,
Where bright-beaming summers exalt the perfume;
Far dearer to me yon lone glen of green breckan,
Wi' the burn stealing under the lang yellow *Broom*;
Far dearer to me are yon humble *Broom* bowers,
Where the blue-bell and gowan lurk lowly unseen;
For there lightly tripping amang the wild flowers,
A-listening the linnet, oft wanders my Jean."

Nor was our humble shrub much less distinguished even by royalty, mid the "uncivill civill warres" of the fourteenth century, than the antagonist Rose herself; for a sprig of this *Planta Genista* was the adopted badge of Gefroi, Duke of Anjou, father of our Henry the Second; and from this cognizance he acquired the name of Plantagenet, by him transmitted to his princely descendants, who all bore it from Henry, who has been called the first royal sprig of *Genista*, down to the tyrant Richard, the last degenerate scion of the plant of Anjou. The historical fact is thus commemorated in an interesting little work entitled the "Wild Garland."

"Time was, when thy golden chain of flowers
Was link'd, the warrior's brow to bind;
When rear'd in the shelter of royal bowers,
Thy wreath with a kingly coronal twined.
The chieftain who bore thee high on his crest,
And bequeath'd to his race thy simple name,
Long ages past has sunk to his rest,
And only lives in the voice of fame.

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* (Supposed from "*genuum flexitate*, but its applicability is not very apparent. E.)

G. TINCTO'RIA. Branches scored, cylindrical, upright, without thorns: leaves spear-shaped, smooth: legume cylindrical.

Dicks. H. S.—*Fl. Dan.* 526—*E. Bot.* 44—*Kniph.* 6—*Fuchs.* 808—*Trag.* 604—*Dod.* 763. 1—*J. B.* i. *b.* 391—*Ger.* 1134. 1—*Clus.* i. 101. 2—*Lob. Obs.* 521. 2, *and Ic.* ii. 90. 2—*Ger. Em.* 1316. 1—*Park.* 229. 7.

Flowers in leafy spikes. *Flower-leaves* shorter than the blossoms. *Calyx* with five nearly equal clefts. *Blossom standard* egg-shaped, blunt; *wings* oblong, oval; *keel* compressed. *Summit* a little knob. *Blossom* yellow. (*Stems* one or two feet high. *Seeds* numerous. *Leaves* alternate, sessile, undivided, spear-shaped, smooth, sometimes having a few hairs at the edge and underneath. Fl. Brit. E.)

DYERS' GREEN-WEED. WOOD-WAXEN. (Welsh: *Melynog y waun.* E.) Pastures and borders of corn-fields. S. July—Aug.*

G. PILO'SA. Leaves egg-spear-shaped, blunt, (hairy beneath: E.) stem tubercled, prostrate, (without prickles. E.)

Jacq. Austr. 208—*E. Bot.* 208—*Kniph.* 5—*Rose* 3. 1—*Clus.* i. 103. 2—*Ger. Em.* 1313. 6—*Ger.* 1132. 6—*J. B.* i. 393. 2.

Stem and *branches* tough, lying close to the ground, even beneath the moss. *Stem* much branched; the old branches naked, the young ones clothed with leaves. *Leaves* numerous, minute, oval, or oval-spear-shaped, entire, smooth above, with white silky hairs underneath. *Flowering-branches* ascending. *Flowers* in short terminal spikes. *Fruit-stalks* short, hairy. *Calyx* hairy, yellowish green; lips nearly equal, pointed. *Blossom* yellow, hairy without, excepting the wings. *Legume* hairy, Woodw. (with few seeds. E.)

(HAIRY GREEN-WEED. E.) Pastures, heaths, dry and hilly places. About Lackford, four or five miles from St. Edmund's Bury, and on Soap Rocks, near the Lizard Point. E.) Sir J. Cullum. Heaths near Bury, which are perfectly yellow with it when in flower, but after flowering it is with difficulty found, the stems lying so close to

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Though the feeblest thing that nature forms,
  A frail and perishing flower art thou;
Yet thy race has survived a thousand storms
  That have made the monarch and warrior bow.

The storied urn may be crumbled to dust,
  And time may the marble bust deface;
But thou wilt be faithful and firm to thy trust,
  The memorial flower of a princely race." E.)

* A yellow colour may be prepared from the flowers, and for wool that is to be dyed green with woad, the dyers prefer it to all others. (In the Journal of a Naturalist it is said that this plant is seldom eaten by cattle, except in cases of great necessity, and remains untouched, if other food be obtainable, giving a deceitful appearance of verdure to a naked pasture. The poorer people in certain districts collect it by cart loads about the month of July, when the seed of Wood-waxen proves a little harvest to them, at which women can gain two shillings per day; but it is considered a laborious occupation, the plant being drawn up by the roots, which are strongly interwoven in the soil. Vegetable filaments are very differently constituted from those afforded by animals, and are differently disposed to receive colours. The dye that will give a fine colour to the one, may be rejected by the other; and this plant is rarely or never used by the dyer for cotton articles." E.) A dram and a half of the powdered seeds is mildly laxative. A decoction of the plant is sometimes diuretic, and therefore has proved serviceable in dropsical cases. (It is esteemed in Russia as a cure for hydrophobia. E.) Horses, cows, goats, and sheep eat it. (Ray asserts that it renders the milk bitter. *Apion Genistæ*, described in Linn. Tr. x. inhabits this species. E.)

the ground. Mr. Woodward. Between Dolgelly and Llyn-Arran, at the foot of Cader Idris, about half a mile from the pool. Mr. Griffith. (Between Zennar and Mawgan, Cornwall. Rev. J. Pike Jones. On the very western point of St. David's Head, Pembrokeshire, in considerable quantity. Mr. Milne, Bot. Guide. E.) S. May—June.

G. An'glica. Thorns both simple and compound: leaves egg-spear-shaped: (flowering branches destitute of thorns. E.)

Dicks. H. S.—*E. Bot.* 132—*Fl. Dan.* 619—*Dod.* 760—*Lob. Obs.* 535. 2, and *Ic.* ii. 93. 2—*Ger. Em.* 1320. 4—*Park.* 1004. 4—*Ger.* 1140. 5—*Lonic.* i. 39. 1.

(*Stems* much branched, about a foot high, reclining, furnished with acute spines. E.) The *old branches* tough, without leaves, beset with thorns; *thorns* very sharp, slender, a quarter to half an inch long; the shoots of the year fasciculated at the end of the old ones, but sparingly from the sides, with numerous leaves intermixed with soft thorns. *Leaves* sometimes oval, smooth, entire, small, bright green. *Flowers* pale, yellow, small, few. Woodw. *Calyx* yellow. *Summit* a small knob. *Seed-vessel* turgid, with from three to fourteen seeds. (The leafy branches of the present year become next season woody, awl-shaped thorns. Sm. E.)

Needle Furze. Petty Whin. Needle Green-weed. (Welsh: *Crackeithinen ; Eithinen yr iâr.* E.) Heaths and moist spongy ground. Bungay Common. Mr. Woodward. Heaths, west of Bishop's Aukland. Mr. Robson. (On Newcastle Town Moor, at Gateshead Fell. Mr. Winch. Coleshill Heath, Warwickshire. Bree, in Purton. Goonhilly Downs, Cornwall. Guide. In a large enclosure above the wood leading to Conham Ferry, Brislington, near Bristol. Mr. Frederick Russell. In Anglesey. Welsh Bot. Pentland Hills. Maughan. Grev. Edin. E.) New Forest, near Stony Cross. Broadmoor, near Birmingham. S. May—June.

U'LEX. *Calyx* two-leaved : *Legumen* scarcely longer than the calyx.

U. Europæ'us. Calyx shorter than the blossom, with two spear-shaped deciduous scales at the base: (smaller branches erect. E.)

(*E. Bot.* 742. E.)—*Fl. Dan.* 608—*Clus.* i. 106. 2—*Dod.* 759. 1—*Ger. Em.* 1319. 1—*Park.* 1004. 1—*J. B.* i. *b.* 400. 2.

(*Stems* several feet high, very numerous, furrowed, hairy, and extremely thorny, branches. *Spines* angular, pungent, smooth. *Leaves* springing from the base of the spines, solitary, awl-shaped, roughish, deciduous. *Calyx* sometimes woolly, but not equally so in all plants; its *teeth* converging. E.) *Blossom* yellow, large, (half as long again as the calyx, emitting a smell like honey. E.) Besides the pair of scales at the top of the fruit-stalk close to the calyx, there is a single scale at its base, on the outer side.

Common Furze, (so called chiefly in the south of England; Whin in the east; and Gorse in the north. E.) Heaths, road sides, and pastures, but does not flourish in very poor soil. Extremely luxuriant in Cornwall, growing to the height of six or eight feet. P. May—Aug.*

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* Gorse is in some respects a very hardy plant, and will make fences upon the bleaker mountains, and close to the sea side, where the spray of the sea kills almost every other

shrub; but it is impatient of cold, is often destroyed by severe frost, and is rarely found in the northern parts of our island. (When it can no longer exist in open exposed moors, it may still be observed in sequestered denes at a height of two thousand feet, in the north of England. Winch. Furze bushes, growing upon many downs in Wales, Devon, and Cornwall, assume commonly the appearance of large, green, dense balls, every tender leaf being constantly shorn away by the sheep and rabbits that frequent those places. E.) In Cornwall, where fuel is scarce, it is cultivated to advantage, and is generally cut to make faggots for heating ovens, which it does very soon, burning rapidly, and with a great degree of heat. (The burning of Furze and heath on commons between Candlemas and Midsummer, by stat. iv. and v. William and Mary, c. 23, is punishable with whipping and imprisonment; yet, on pretence that where the old covering is consumed, young plants will sprout up, and afford tender browse for cattle, fires are often unseasonably kindled which spread dasolation, and exhaust the soil

——— "Crepitantibus urere flammis." E)

The ashes are used to make ley. Team horses may be supported by this plant, if it be cut young and bruised in a mill to break the thorns. (Mr. Evans informs us that Mr. Davis, of Lachtony, near Kidwelly, cultivates ten acres of Furze, which he propagated by seed: (six pounds to an acre is sufficient for this purpose. E.) With these Whins, which he cuts every year, he keeps his whole team and riding horses through the winter; he gives it mixed with hay to his horned cattle. The produce per acre is from 12 to 15 tons weight A man will bruise 36 bushels per day. This plant, in some parts of Wales, grows to 10 or 12 feet high, and its stems are often cut for fuel. Goats, cows, sheep and horses feed upon the tender tops. During the winter of 1813-1814, the bât-horses and mules of the British army in position before Bayonne were chiefly supported by this kind of fodder, and the practice is general in the south of France.—In the Scilly Islands the chief food of the horses, or rather ponies, is the Furze which they find on the hills. "This plant, which is as singular by its *chevaux-de-frise*, branches, as enlivening by its golden blossoms, is only to be found in temperate climates." There indeed

"The prickly *Gorse*, all shapeless and deformed,
And dangerous to the touch, has yet its bloom,
And decks itself with ornaments of gold." Cowper.

Furze was formerly used for burning lime, and for other agricultural and domestic purposes; but since the general diffusion of coal by canals and improved roads its relative importance for fuel is greatly diminished. According to Evelyn, Furze was cultivated on poor lands in Devon and Herefordshire, and yielded a crop of fuel and fodder valuable as that of wheat. It also forms an excellent cover for game, and shelter for seedling forest trees. In calm and sunny weather the crackling of Furze bushes, occasioned by the explosion of their elastic pods, is distinctly audible.

——— "The path with tangling *Furze* o'er-run,
When bursting seed-bells crackle in the sun."

The odour also exhaled from the incalculable myriads of blossoms, especially when lavishly wafted by some gentle gale athwart the traveller's way, is very delightful, though peculiar, and, as some think, resembling that of the honey with which the flowers are richly fraught. The climate of Sweden being too severe for the spontaneous production of this plant, Linnæus had never seen it in perfection till on his visit to England; when, on first beholding its brilliant and widely extended exuberance, he is said to have actually prostrated himself in a transport of admiration. We have ourselves witnessed the pleasurable emotion of far less ardent lovers of the beauties of nature, on viewing the golden expanse as exhibited in a Cornish May; and those even just landed from the

——— "Litora myrtetis lætissima;"

Where

"E'en the rough rocks with tender myrtle bloom."

E. Bot. 743.

A plant of more humble growth, with shorter spines, and smaller flowers than the preceding. *Calyx* silky, less woolly, with teeth deeply cut and standing apart. *Blossom* of a less bright colour than the former. Fl. Brit. *Stems* and *branches* less deeply furrowed, and the leaves more permanent; but the best characteristic is that pointed out to me by Mr. Stackhouse, who first observed that *U. Europæus* has a pair of distinct scales at the base of the calyx, which are pale and deciduous like the leaves; but that *U. nanus* has a pair of dark-coloured spots, not deciduous. These, when examined under a glass, are really scales, but very minute. The *calyx* in this species is scarcely at all woolly. Both species vary much as to hairiness, as well as in the length of their thorns; but the luxuriant and more upright growth of the former is strongly contrasted by the dwarfish and stunted appearance of the latter.

DWARF FURZE. (Welsh: *Eithin mân.* *U. nanus.* Forst. Sm. Willd. *U. minor.* Roth. *U. Europæus β.* Linn. E.) On barren commons. Flowers all the year, but never more fully than in September and October: (the flowering of the other species prevails chiefly in the spring months. P. E.)*

ONO'NIS.† *Cal.* with five divisions: *Standard* striated: *Legumes* rhomboid, sessile.

O. SPINO'SA. Flowers in bunches, solitary: leaves solitary or three together: branches thorny.

Ludw. 68—*Kniph.* 5—*Sheldr.* 79—*Blackw.* 301—*Riv. Tetr.* 69, *Anonis*—*H. Ox.* ii. 17, *row* 1. 1. *f.* 3—*Fl. Dan.* 783—*J. B.* ii. 391. 2—*Ger.* 1141. 1—*Fuchs.* 60—*Trag.* 869—*Matth.* 674—*Dod.* 743. 2—*Lob. Obs.* 492. 2, *and Ic.* ii. 28. 1—*Ger. Em.* 1322. 1—*Park.* 994. 1—*Lonic.* i. 72. 1.

Stems decumbent, woolly, reddish, thorny, especially from the base to the middle. *Thorns* awl-shaped, pungent, with sometimes one or two leaves. *Flowers* mostly solitary, but when two, they are fixed to a cloven fruit-stalk. Retz. Whole *plant* more woody and rigid than *O. arvensis.* *Stem*

Entirely confined to *U. Europæus*, and to be met with all the summer in Britain, (though not known on the Continent), is *Apion* (*Curculio*) *Ulicis.* Kirby. On this plant also will be found *Abia sericea*, *Apion immune*, and *Arctia Russula*: and the minute *Ips rhododactylus* preys upon, and penetrates the larger stems. E.)

* (Whether this later flowering kind be really a distinct species, or, as we cannot but suspect, merely arising from fortuitous circumstances, here may appropriately be introduced a stanza from the "Wild Garland."

"Mid scatter'd foliage pale and sere,
Thy kindly floweret cheers the gloom;
And offers to the waning year
The tribute of its golden bloom.

Beneath November's clouded sky,
In chill December's stormy hours,
Thy blossom meets the traveller's eye,
Gay as the buds of summer bowers.

Flower of the dark and wintry day!
Emblem of Friendship! thee I hail!
Blooming when others fade away,
And brightest when their hues grow pale." E.)

† (From ονος, an ass; and ονημι, to delight; asses being fond of it. E.)

slightly hairy. *Branches* terminating in softish thorns. *Thorns* at the base of the young branches, strong, early in the summer not pungent. *Leaves* almost smooth. *Calyx* hairy; segments awl-shaped, unequal. *Blossom* twice as long as the calyx. Woodw. In its young state, before the thorns are formed, it has frequently been mistaken for *O. arvensis*. *Flowers* red.

Thorny Rest-harrow. Cammock. Ground Furze. (*O. spinosa* β. Linn. Fl. Brit. E.) Barren pastures, hedge-banks, hollow ways, either in a sandy or a marly soil. P. July.*

O. arven'sis. Flowers in bunches, two together: leaves three together, the upper ones solitary: branches without thorns, somewhat woolly.

(*E. Bot.* 682. E.)—*Ger.* 1142. 3.

In the autumn of 1779, I examined many hundreds of *O. arvensis* in the corn-fields at Berkhamstead, Hertfordshire, without finding a single one with thorns. *Stem* and. *branches* woolly. *Leaves* somewhat woolly, broader, more egg-shaped, and not so elliptical as those of *O. spinosa*. *Flowers* more numerous, mostly solitary, on the young shoots, alternate. *Calyx*, segments more tapering. Woodw. Mr. Pitt, of Pendeford, near Wolverhampton, sent me specimens which he assures me never become thorny, and that the thorny sort is never found in that neighbourhood. I found it in great plenty on St. Vincent's Rocks, without the least appearance of thorns on any of the plants, though I examined a great number. A smaller plant than *O. spinosa*. *Stems* and *branches* woody, cylindrical, a little hairy. *Leaves* set with glandular hairs; the upper oblong-egg-shaped, toothed. *Leaf-stalks* short, fixed to a broad toothed leaf-scale. *Flowers* scattered, intermixed with leaves. *Calyx*, some of the hairs long and tapering, others short and tipped with glands; segments, four of them pressing on the standard, the lowermost supporting the keel. *Blossom standard* circular, with a small point at the end, with short hairs on the outside, of a fine rose-colour, streaked with deeper coloured lines; *wings* more than half as long as the standard, egg-shaped, white; *keel* coloured and streaked as the standard. *Anthers* yellow. *Germen* with hairs tipped with glands. *Seeds* about six. *Flowers* sometimes nearly white. The hairiness of the leaves and the want of thorns best distinguish this from *O. spinosa*, whose thorns are so remarkable, and whose leaves are scarcely, if at all, hairy on the upper surface, though in both they are edged with hair-like glands terminating in small globules.

Hairy Rest-harrow. (Irish: *Stran boh.* Welsh: *Hwp yr ychen.* E.) *O. inermis.* Huds. (*O. arvensis a.* Fl. Brit. E.) Mostly in light land, and corn-fields. P. June.

Var. 2. Stems prostrate; whole plant clammy.

Whole *plant* clammy, not so downy as *O. arvensis*. *Flowers* larger and fewer. *Leafits* oblong wedge-shaped. *Calyx* segments shorter and blunter. Whether distinct from *O. arvensis* it is difficult to say, but I am inclined to Mr. Hudson's opinion, as being removed into a garden it became upright, and more downy. If a variety, it is of *O. arvensis* and not of *spinosa*. Woodw. This has been taken for *O. repens* of Linnæus; but Dr. Afzelius informed me that species had not been found in England, which confirms Hudson's opinion, formed after cultivating them together, that this is not specifically different from the *arvensis*. Mr. Woodward describes the *arvensis* as more downy than this, but my specimens from the southern coast are much more downy than those in the corn-fields of the midland counties.

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* A decoction of the roots has been recommended in calculous complaints and jaundice. Cows and goats eat it; sheep are very fond of it; horses and swine refuse it. Linn. (The younger shoots, without thorns, do not appear to be objectionable to cattle. "It is sooner founde then desired of husbande men, because the tough and woodie rootes are cumbersome unto them, by reason they do staie the plough, and make the oxen stande, whereupon it was called *Rest Plough*, or *Rest Harrow*." Ger.—by the old herbarists *Arresta bovis* and *Remora aratri*. It seems difficult to destroy it by fallowing. The following species is nearly as troublesome where it prevails. *Apion Ononis*, of Kirby, inhabits this plant. E.)

CREEPING REST-HARROW. (*O. repens.* Linn. *O. arvensis* γ. Fl. Brit. E.) Sea-shore in sandy soils, frequent. Lightfoot. Field by Charlton church, between the gravel-pit and Woolwich, towards Gravesend, and on the sand-downs by Deal, and near Yarmouth. Ray. At Sandscale; and in Walney, plentiful. Common in dry sandy pastures in Low Furness. Mr. Atkinson. (North Shore, near Liverpool. Dr. Bostock. E.) P. June—July.*

ANTHYL'LIS.† *Calyx* inflated, inclosing the *legume*.

A. VULNERA'RIA. Herbaceous: leaves winged, unequal: heads of flowers in pairs.

Dicks. H. S.—*Kniph.* 6—*Fl. Dan.* 988—*E. Bot.* 104—*Dill. Elth.* 431. 320—*Riv. Tetr.* 18. 1, *Anthyllis*—*Ger.* 1060. 1, *and* 1023. 4—*J. B.* ii. 362—*Dod.* 552. 1—*Lob. Obs.* 530. 1, *and Ic.* ii. 87. 2—*Ger. Em.* 1240. 1—*Park.* 1093. 1.

Stems ascending, about a foot high, cylindrical, downy, with five or six pair of leafits. *Leaves* downy, hairs adpressed. *Flowers* sessile, deep yellow. Each head supported by two floral leaves, the larger six or seven cleft, the smaller with four. The structure of the *filaments* is singular; towards the top they swell out like a hollow bladder, in shape of an inverted pyramid, and the anthers are fixed to the central part of the base of the pyramid. *Style* thickest at the curvature, thinner above and below. (*Calyx* membranous, whitish, hairy. E.)

KIDNEY VETCH. LADIES-FINGER. (LAMB-TOE. Welsh: *Plucen felen.* E.) Meadows and pastures, in chalky or calcareous soil. Wick Rocks, Somersetshire. Rev. G. Swayne. Craven, Yorkshire. Mr. Caley. Arthur's Seat, Edinburgh. Dr. Stokes. Limestone-pits, Cradley; near Malvern Hill, Worcestershire. Mr. Ballard. (Common in Norfolk and Suffolk, wherever the soil is chalky. Mr. Woodward. Coughton fields, near Alcester. Purton. E.) Coast of Devon, common. P. May—Aug.‡

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* (These species appear to afford a favourite repast to the large brown-shelled snail *Helix hortensis*, (rendering them almost as fit for patès as the delicious *H. pomacea* of the Continent,) as we have observed on the rocks near Teignmouth. E.)

† (From ανθος, a flower; and ιυλος, the first down on the chin; the whole plant being covered with soft down. E.)

‡ (As a vulnerary, its utility is at least problematical: though in Threlkeld's time (1727) it was regularly sold in Dublin market "by the name of *Stanch*, being astringent." Stirp. Hibern. E.) A yellow dye may be obtained from it. It affords an excellent pasturage for sheep. Where the soil was a reddish clay, Linnæus remarked the blossoms to be red, but in white clay, white. (In Portugal we have always found them red. In England, most commonly, as the rustic poet observes,

"The *yellow* Lamb-toe I have often got,
Sweet creeping o'er the banks in sunny time." E.)

Goats and cows eat it. (Though not in cultivation, Mr. Salisbury considers it well worth attention, as, where it flourishes most, (in calcareous soil), cows produce better milk and in greater quantity. E.)

Var. 2. Blossoms scarlet, or purple.

In Pembrokeshire. Ray. On the sand-banks near Llandwyn, Anglesey. Mr. Griffith. (In Cornwall. Mr. Stackhouse. Scotland. Mr. Winch. E.)

(On the downs of Sussex this plant is found with white blossoms. Mr. Borrer, in Bot. Guide. Also near the old fortification on Bryn Gwydryn, Anglesey. Rev. Hugh Davies. E.)

PI'SUM.* *Calyx*, two upper segments shorter; *Style* with three angles, keeled, and pubescent above: *Legume* tumid.

P. MARIT'IMUM. Leaf-stalks flattish on the upper side: stem angular: stipulæ arrow-shaped: fruit-stalks many-flowered.

(*Hook. Fl. Lond.* E.)—*Smith Spic. Fasc.* 1. 9—*Fl. Dan.* 338—*E. Bot.* 1046—*Munt. Phyt.* 825. 230—*Ger. Em.* 1220. 5—*Park.* 1060. 4 *and* 5.

Roots striking very deep in the earth. *Stems* trailing, short; the outline of the whole plant oval. *Leaves* numerous, alternate; *leafits* oval, alternate, sessile, smooth, the outer not invariably smaller, on the lower leaves five to seven, on the upper nine to eleven, always one more on the outer side of the leaf-stalk, generally cloven, sometimes simple. *Leaf-scales* in pairs, oval spear-shaped, broad, arrow-shaped at the base. *Flowers* towards the end of the fruit-stalks, crowded, on short pedicles. Woodw. *Blossom* pale red and purple.

Sea Pea. Sea-shores. On a stony beach between Aldborough and Orford, Suffolk. Ray. Woodward. Near Hastings; and on the west side of Dungeness, near Lyd. Ray. Rye and Pevensey, Sussex; Guildford, opposite the Comber; and Ingolm Mills, Lincolnshire. On the sharp ridge running from Portland Island to Bridport, some distance to the right of the ferry, amongst loose pebbles, about fifteen or twenty feet above high water mark; but the cows eat it down so that it is difficult to procure a specimen in flower. Mr. Stackhouse. (Abundant on the beach near Walmer Castle, Kent. Mr. Dillwyn, in Bot. Guide. Sandown beach, Hampshire. Pulteney. Beach near Penzance. Heath. E.)
P. July—Aug.†

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* (From πισος, a garden; as being generally cultivated. E.)

† In 1555, during a time of great scarcity, the people about Orford were preserved from perishing by eating the seeds of this plant, which grew there in great abundance upon the sea coast. Cows, horses, sheep and goats eat it. It affords nourishment to *Phalæna Pisi*. (Different kinds of Peas, especially those cultivated as pulse, are subject to the ravages of innumerable *Aphides*, or Plant-lice. These insects are endued with fecundating powers most extraordinary, being at one time viviparous, at another oviparous; and, what is without parallel, the ingress of one original pair serves for all the generations, (about twenty), which proceed from the individual for a whole succeeding year! see Kirby and Spence Entomology. i. 176.—Thus to whichever kingdom of nature our attention is more immediately directed, for

———— "Each moss,
Each shell, each crawling insect, holds a rank
Important in the plan of Him who framed
This scale of beings;"

we cannot but be struck with the "Opera mirifica Dei;" and such contemplations must ever afford to the intelligent mind a noble and refined luxury, a rational delight, and one that charms with continued variety. E.)

O'ROBUS.* *Calyx*, the two upper teeth shorter but more deeply divided: *Style* slender: *Summit* pubescent above.

O. SYLVAT'ICUS. Stems decumbent, hairy, branched: leafits seven to twelve pair.

Dicks. H. S.—(*Hook. Fl. Lond.*—*E. Bot.* 518. E.)—*Lightf.* 16. *p.* 390.

Stems numerous, one to two feet long, trailing, much branched, slightly hairy. *Leaves* winged, alternate; *leafits* oval, or elliptical, terminated by a pointed extension of the mid-rib; on short hairy leaf-stalks, somewhat alternate, six to twelve pair, without an odd one, but with a sort of beard at the end of the general leaf-stalk. *Flowers* numerous, on short pedicles, crowded, mostly pointing one way, on the top of a long naked fruit-stalk. *Stipulæ* half-harrow-shaped, two at the base of each general leaf-stalk, smaller than those of *O. tuberosus*, and ending in a more acute point. *Calyx* short, green, tinged with red, fringed, lips nearly equal, the upper with two teeth, the lower with three, rather longer. *Blossom* long and narrow, reddish white, veined with purple, compressed. Woodw. (*Root* rather woody. *Legume* nearly an inch long, smooth. E.)

(Sir J. E. Smith reports an extraordinary variety to have been found at Hafod, in South Wales, by Mr. Todd, with simple leaves, five times as large as its natural leafits, and which cannot by any culture be made to flower. E.)

WOOD BITTER-VETCH. WOOD PEASLING. Woods, hedges, pastures, dry rocky places, and banks of rivers. (Lowlands of Scotland. North side of Braid Hill, near Edinburgh. Mr. Brown. Fringing the rocks along the banks of the Clyde, near the beautiful cascade of Corra Lyn. Dr. Hooker. E.) Ten miles from Penrith; Gamblesby, Cumberland. Mr. Woodward. Below Brecknock Hills, in the way to Cardiff, and not far from Bala, Merionethshire. Upper part of Merley Wood, near Oxford. Near Ross-Trevor, Ireland. Ray. Woods about Airly Castle. Mr. Don. On the Tweed, about half a mile below the Buld. Dr. Hope. About Cerrig y Druidion, and Ys pytty, Denbighshire. Mr. Griffith.
P. May—July.

(O. NI'GER. Leaves winged, of from four to six pair of elliptic-lanceolate leaflets: stipulæ linear-awl-shaped, simple, entire: stem branched, angular, erect.

Riv. Tetrap. Irr. t. 60—*Clus. Hist. v.* 2. 230—*Dod. Pempt.* 551—*Ger. Em.* 1239—*Lob. Ic. v.* 2. 78.

Root tapering, sweet according to Linnæus. *Herb* smooth. *Stems* several, one and a half to two feet high, upright, branched, leafy, angular, not winged. *Leaves* usually of about five pair of elliptic-oblong, blunt, bristle-pointed, veiny *leaflets* an inch long, not invariably opposite; the common stalk very little elongated beyond them. *Flower-stalks* axillary, rather longer than the leaves, each bearing a *cluster* of four or five elegant, blueish-purple, *flowers*. *Legumes* blackish, cylindrical.

BLACK BITTER-VETCH. *O. niger.* Linn. Found by Mr. Thomas Drummond, in the den of Airkey, ten miles west of Forfar, sparingly.
P. June—July. Hook. Scot. Sm. Eng. Fl. E.)

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* (From ορω, to excite; and βȣς, an ox; the plant refreshing and nourishing cattle. E.)

O. TUBERO'SUS. Leaves winged, spear-shaped: stipulæ half-arrow-shaped, very entire, (toothed at the base: Fl. Brit. E.) stem simple, erect.

Dicks. H. S.—Curt.—(*E. Bot.* 1153. E.)—*Riv. Tetr.* 59, *Orob. rad. tub.*—*Sib.* 1—*Ger. Em.* 1237. 2—*H. Ox.* ii. 21, *row* 2. *f.* 3—*Fl. Dan.* 781—*Thal.* 1—*Park.* 1062. 5.

Stems at first decumbent, but upright when in flower. Linn. (About a foot high, winged, slender, leafy. *Root* tuberous, black on the outside, and knobby. *Leafits* one to three pairs, sessile, elliptical, the upper ones narrower and nearly strap-shaped, without an odd one, but the leaf-stalk is extended into a point. *Stipulæ* in pairs at the base of the leaf-stalks. *Flowers* four or five in a bunch, on short slender pedicles. Woodw. *Stems* with two or three membranous leafy edges. *Style* strap-shaped, not pointed at the end. *Seeds* compressed, about twelve. *Blossoms* purple, large, three or four together. *Legume* flattish, black, pendent.

(The leafits are sometimes narrow, linear, constituting *O. tenuifolius*, of Roth. E.)

HEATH PEASELING. (TUBEROUS BITTER-VETCH. *Cor-meille*, of the Highlanders. Irish: *Carmel.* Welsh: *Pysen y coed gnapwreiddiawg.* E.) Moist heaths and woody meadows, not rare. P. April—May.*

LATH'YRUS.† *Cal.* two upper segments shorter: *Style* flat, dilated upwards, downy on the upper surface.

(1) *Fruit-stalks single-flowered.*

L. APH'ACA. Tendrils without leaves: stipulæ arrow-heart-shaped.

Curt.—(*E. Bot.* 1167—*Purt.* 3. E.)—*Ges.* 41—*Mill. Ill.* 43—*Lob. Obs.* 518. 1, *and Ic.* ii. 70. 1—*Ger. Em.* 1250—*Park.* 1067—*H. Ox.* ii 4. 7.

Stems quadrangular, trailing. *Stipulæ* oval-spear-shaped, arrow-shaped at the base, in pairs, smooth, somewhat sea-green, marked underneath with numerous parallel ribs, larger towards the top of the stem. *Fruit-stalks* long, from the bosom of the leaf-scales, alternate. *Tendrils* solitary, simple, opposite to the fruit-stalks. *Floral-leaves* awl-shaped,

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* The roots, when boiled, are savoury and nutritious; ground to powder they may be made into bread. They are held in esteem by the Highlanders of Scotland, who dry them in their pockets, and chew them, as our people do tobacco, and find that they prevent the uneasy sensation of hunger. They imagine that they promote expectoration, and are efficacious in curing disorders of the lungs. They know how to prepare an intoxicating liquor from them. Penn. Tour. 1772. p. 310. Ray's Hist. Plant. p. 916. This plant is supposed to be the *Chara* named in Cæsar's Commentaries, De Bell. Civ. iii. 40. "Ipse autem, consumptis omnibus longè latèque frumentis, summis erat in angustiis.

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Est etiam genus radicis inventùm ab iis qui fuerant cum Valerio, quod appellatur *Chara*: quod admistum lacte, multùm inopiam levabat; id ad similitudinem panis efficiebant."—Also the same mentioned by Dio, on which, mixed with milk, the soldiers of Valerius' army subsisted under a penury of bread. Vid. also Sibbald Miscel. Antiq. fo. 1710. E.) Horses, cows, goats, and sheep eat it.

† (The meaning of this name, derived from Theophrastus, is not apparent; unless the conjecture from λαθω, to lie hidden, be admissible; but that does not obviously apply to the habit of the plant. E.)

minute, one at the base of each flower. *Calyx* divided almost to the base; *segments* equal, smooth, nearly as long as the blossom, strap-spear-shaped. *Blossom* greenish yellow at the base. Woodw. (*Legume* compressed, smooth. E.) The stipulæ in this plant supply the place of leaves, and as such they might be considered, but the real leaves are very minute, and only exist, according to Curtis, for a short time after the sprouting of the seed. *Flowers* yellow, small.

YELLOW VETCHLING. Sandy corn-fields and meadows. Histon, near Cambridge, and between Norwich and Bungay. Mr. Woodward. (Malton fields Teesdale. Corn-field at Monckton, near Rippon. Mr. Brunton. Corn-fields near the chalk pits, Newport; and in corn near Ongar and South End, Essex. Mr. Forster, jun. Sunderland Ballast Hills. Mr. Winch. Alne Hills, Cleve, and Littleton, Warwickshire. Purton. E.)
A. June—Sept.*

L. NISSO'LIA. Leaves simple, without tendrils: stipulæ awl-shaped.

(*Curt.* E.)—*E. Bot.* 112—*Buxb.* iii. 45. 1—*Dod.* 529. 4—*Lob. Obs.* 518. 2, *and Ic.* ii. 71. 1—*Ger. Em.* 1249. 2—*Park.* 1079. 4—*J. B.* ii. 309. 1.

Stem upright, (supported by other plants,) simple, angular, twisted, slightly hairy. *Leaves* alternate, smooth, sword-shaped, resembling those of Grass. *Stipulæ* in pairs, at the base of the leaves. *Fruit-stalks* axillary, slightly hairy, shorter than the leaves, with rarely more than one flower. E.) *Blossom* beautiful crimson. *Legume* strap-shaped, slightly downy, terminated by a straight style. Woodw. (What are usually termed *leaves* in this species, are by De Candolle considered as dilated *petioles*: and see a further illustration in Fl. Lond. E.)

CRIMSON GRASS VETCH or VETCHLING. Borders of corn-fields and pastures. Ripton, Huntingdonshire. Mr. Woodward. (Thelveton Church-yard, near Diss, Norfolk. Mr. Walker. At Sigglesthorne in Holderness. Mrs. Wharton. In an old chalk pit, by the road from Houghton to Amberley. Mr. Borrer. In Higham hill field, and near Hagger lane, Walthamstow. Mr. E. Forster, jun. in Bot. Guide. Near the turnpike on the new road to Folkstone. Rev. J. D. Glennie, in Smith's Obs. E.) Woods at Belmont, Staffordshire. Mr. Pitt. Hadsor wood, near Droitwich. Mr. Baker. About Teignmouth. Mr. Martyn. Borders of a corn-field near Wick Cliffs, Somersetshire. Rev. G. Swayne. Coton-field, Stafford, in the hedge bank on the upper part. A. May.†

(2) *Fruit-stalks with more than one flower.*

L. HIRSU'TUS. Fruit-stalks mostly two-flowered: tendrils with two leaves: legumes hairy: seeds rough.

(*E. Bot.* 1255. E.)—*J. B.* ii. 305—*Riv. Tetr.* 41, *L. siliquis hirsutis.*

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* The seeds, both of this and of all the other species, are nutritious, either eaten in broth or made into bread.

† (The name appropriated by Tournefort to a genus, now used to designate our species, was bestowed to commemorate Mr. G. NISSOLE, a French Botanist, whose zeal induced him to adopt the ingenious expedient of searching the siftings of grain imported from foreign parts, by growing which he obtained many curious exotics. Glossaire Botanique. The leaves are so like those of grass, that unless the plant be in flower it may readily be overlooked. (Its beauty would recommend it to a place in our gardens, were it not of very short duration. Like several other leguminous plants, it is particularly subject to the depredations of a species of *Curculio.* E.)

Stems angular, twisted, slightly hairy, about two feet long. *Leafits,* a single pair, slightly hairy, with three strong ribs, terminated by an awn. *Leaf-stalks* triangular, furrowed above, ending in *tendrils* mostly dividing into three. *Stipulæ* half-arrow-shaped, pointed, with long appendages, two at the base of each leaf-stalk. *Fruit-stalks* very long. *Flowers* about one or one inch and a half from each other. *Flower-scales* awl-shaped, small, about a quarter of an inch beneath the terminal flower, and at the base of the short pedicle of the lower. *Calyx* one-third the length of the blossom ; clefts extending half way down ; segments five, equal. *Pods* short, covered with hair, each hair proceeding from a gland. Woodw. *Blossom* variegated with purple and white, with yellow lines within. (*Stems* climbing. *Stigma* permanent, very blunt. E.)

ROUGH-PODDED VETCHLING. Corn-fields and ditch banks. Fields about Hockley and Rayleigh ; and elsewhere in Rochford, Essex. Near Munden Church and Laydon Hall in Dengy Hundred, Essex. Blackstone. On the sides of two hills, the one north of Pensford, on the Bristol road, the other between Pensford and Keynsham, Somersetshire. Rev. G. Swayne. (Sunderland Ballast Hills. Mr. Winch.) A. July.

(3) *Fruit-stalks many-flowered.*

L. PRATEN'SIS. Tendrils with two leaves, mostly simple : leafits spear-shaped.

Kniph. 11—*Curt.* 170—(*E. Bot.* 670. E.)—*Riv. Tetr.* 43 *L. pratensis*—*Fl. Dan.* 527—*J. B.* ii. 304. 2—*Walc.*—*H. Ox.* ii. 2. 2—*Anderson*—*Lob. Obs.* 517. 3, *and Ic.* ii. 69. 2—*Ger. Em.* 1231. 6—*Park.* 1061. 1.

(*Root* tuberculous. *Stems* slender, climbing, two or three feet long, E.) much branched. *Leaves* smooth. *Leaf-stalks* furrowed, triangular, terminating in tendrils. *Stipulæ* spear-arrow-shaped, large, in pairs at the base of each leaf-stalk. *Fruit-stalks* long, with four, five, or more flowers. *Pedicles* short, hairy. *Flower-scales* awl-shaped, very minute, one at the base of each pedicle. *Calyx* one-third as long as the blossom, somewhat hairy, cloven half way down ; segments rather unequal. *Legume* black, smooth. *Tendrils* sometimes two or three cleft. Woodw. *Blossom* yellow ; *standard* with six or seven purple lines just above the claw. *Anthers* oblong.

TARE EVERLASTING. YELLOW MEADOW VETCHLING. (Welsh : *Ydbysen y uaun.* E.) Meadows, pastures, woods, thickets, and hedges, (attaining the greatest size on tenacious clayey soils. Hort. Gram. E.) P. July—Aug.*

L. SYLVES'TRIS. Tendrils with two leaves : leafits sword-shaped : stem winged.

(*E. Bot.* 805. E.)—*Riv. Tetr.* 39, *L. sylvaticus, very large*—*Clus.* ii. 229. 2—*Lob. Obs.* 517. 1, *and Ic.* ii. 68. 2—*Ger. Em.* 1229. 1—*Park.* 1063. 3—*Fuchs.* 572—*Trag.* 613—*Dod.* 523. 2—*J. B.* ii. 302. 2—*H. Ox.* ii. 2. 4.

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* *L. pratensis* has been recommended as a new plant for experimental agriculturists, and premiums have been offered for its cultivation. But it does not seem to be agreeable to cattle, as where they have a choice of food they seldom touch it. Besides it produces very few seeds, and those are for the most part devoured by a species of *Curculio.* Mr. Swayne. (*Apion Ervi* and *Lathyri*, according to Kirby, are found upon this species ; also the caterpillar of the white butterfly, *Leucophasia Sinapis*, feeds upon it. (The merits of this Vetchling, as to produce and nutrient qualities, are only in proportion of three to seven of the red clover. It is nauseously bitter. Hort. Gram. E.)

Stems widely spreading, climbing or trailing to the height of five or six feet. *Leaf-stalks* rough at the edge. *Leafits* strap-shaped, not broader than the stem. *Stipulæ* awl-shaped, very narrow. Linn. *Flowers* not more than six in a bunch, as small again as those of *L. latifolius*. Hall. (*Fruit-stalks* longer than the leaves, bearing from four to ten flowers. *Blossom* purple, wings violet, keel greenish. *Legume* declining, smooth, deep red colour. Fl. Brit.

Var. 2. Leaves broader than the stem. Blossom red and white.

Leaves sometimes even broader than those of the next species, and having more than three ribs; but the stipulæ are always narrower than the stem in this species, and always broader in *latifolius*. The flowers in *latifolius* are considerably larger and more numerous than in *L. sylvestris*. E.)

NARROW-LEAVED EVERLASTING PEA OR VETCHING. (Welsh: *Ydbysen barhaus gulddail*. E.) Woods and hedges. Between Castle Camps and Bartlow, Cambridgeshire. Ray. Between Bath and Bristol; and Conway, Wales. Hudson. Wood sides between Pershore and Eckington, Worcestershire. Nash. Shelton Bank, near Salop. Mr. Aikin. On a hill near Pensford, with *L. hirsutus*. Rev. G. Swayne. (In the bushes near the path at the foot of the Short Lith, Selborne, Hants. White's Nat. Hist. On a farm called Tai cochion, in the parish of Llanidan, Anglesey. Welsh Bot. About Teignmouth. Rev. J. Pike Jones. Sedman's Wood, near Scarborough. Mr. Travis. About Dartford, Kent. Mr. Winch. Frequent about Hythe. Mr. Gerard E. Smith. Rocks near the Red Head promontory, on the east coast of Angus-shire. Mr. G. Don, in Hook. Scot. Rocks by Red Neese, near Whitehaven: this station was by Ray and subsequent Botanists referred to *L. latifolius*, but the error has recently been exposed by the Rev. J. Harriman, on whose authority it is now corrected. E.) P. July—Aug.

L. LATIFO'LIUS. Tendrils with two elliptical leafits: stem winged.

(*E. Bot.* 1108—*Mill. Ill.* E.)—*Fl. Dan.* 785 *and* 325—*Riv. Tetr.* 40, *L. Narbonensis*—*Garid.* 108. *at p.* 300—*Mat'h.* 971.

(Much like the preceding, but larger. *Tendrils* often five-cleft. *Flowers* numerous, large, beautiful. Fl. Brit. E.) *Leafits* rolled in, elliptical, several times broader than the stem, sometimes four. *Stipulæ* broader than the stem, nearly halberd-shaped. Linn. *Leaves* with four or five ribs; varying much in length, but always broader than the stem. *Blossom* pale purplish rose-colour.

BROAD-LEAVED EVERLASTING PEA OR VETCHLING. Woods and hedges. Madingley, Eversden, and Kingston Woods, near Cambridge. Ray. Severn Stoke Copse, Worcestershire. Mr. Ballard. (Hawnes and Bromham, Bedfordshire. Rev. Dr. Abbot. E. Bot. E.) P. July—Aug.*

L. PALUS'TRIS. Tendrils with several elliptic-lanceolate leafits: stipulæ spear-shaped: stem winged.

E. Bot. 169—*Fl. Dan.* 399—*Pluk.* 71. 2—*Rap.* 1. *at p.* 210.

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* The beauty of its flowers has obtained it a place in our shrubberies and gardens. (It may readily be entwined over the trellis or around trees, by which its luxuriant clusters of gay flowers will be displayed to advantage. Prof. Martyn suggests that the prodigious crop yielded by this plant, and the lasting nature of its roots, even on a barren soil, should render it a fit object for agricultural experiment. E.)

Whole *plant* smooth. *Stems* with somewhat membranous edges. *Leafits* two or three pair, spear-shaped. *Tendrils* three-cleft. *Flowers* three to six or more, pointing one way. Woodw. *Blossom* blueish purple. (*Legume* pendulous, smooth. *Fruit-stalks* twice as long as the leaves, bearing three to six flowers. *Stem* climbing with tendrils, four feet long. E.)

Chickling Vetch. Marsh Vetchling. Moist meadows and pastures. Peckham Field on the back of Southwark. Ray. Wood near Abingdon. Blackstone. Charley Forest, near Bardon Hill, Leicestershire. Dr. Pulteney. Lancashire and Yorkshire. Hudson. Near Ranaugh, Norfolk. Mr. Humphrey. (Marshes near Beverley, abundant. Teesdale. Near Leeds, and Hull. E.) P. July—Aug.

VIC'IA.* *Summit* bearded underneath.

(1) *Fruit-stalks long; many-flowered.*

V. sylvat'ica. Leafits oval: stipulæ finely toothed, (crescent-shaped. E.)

Dicks. H. S.—Fl. Dan. 277—*E. Bot.* 79—*Pluk.* 71. 1—*Hall.* 12. 2. *at* i. *p.* 172.

Stems numerous, and so much branched that they choak whatever plants they come near. *Leaves* with eight or nine pair of leafits, and terminated by a long and very much branched tendril; *leafits* egg-shaped, oftener alternate than opposite; smooth, with a net-work of veins, and ending in a short point. *Stipulæ* in pairs, small, deeply divided into several awl-shaped segments. *Fruit-stalks* long, thick, quadrangular, scored, upright. *Flowers* numerous, on the upper part of the fruit-stalk pendent, growing irregularly, mostly in twos and threes, with interruptions. *Calyx*, teeth awl-shaped. *Blossom* rather large; *standard* and *wings* whitish, beautifully veined and streaked with blue. Woodw. *Style* and *summits* so slender that the beard on the under side at the end can scarcely be discerned.

Wood Vetch. (Welsh: *Ffugbysen y wig.* E.) (Woods, bushes, and hedges. E.) Malham, near Settle, Yorkshire, and elsewhere in the North. Woodward. Thicket on the north side of Bredon Hill, Worcestershire. Nash. Shelton Bank, near Salop. Mr. Aikin. Woods on limestone about Newton Cartmel for a few years after the woods have been cut down. Mr. Hall. Urswick woods, climbing up the trees for several yards, so as to be very ornamental. Mr. Atkinson. Beech wood, close by the monument on Lansdown, Bath. Mr. Swayne. (Woods near Scarborough. Mr. Travis. Near the bridge over the Elwy called Pont y rallt coch, Denbighshire. Mr. Griffith. Between Lyminge and Elham, Kent. Rev. R. Price, in Smith's Obs. Culgaith woods, by Eden, and Keswick. Hutchinson. Isell woods, Cumberland, where it covers the rocks in beautiful festoons. Rev. J. Dodd. Castle Eden Dean, Durham. Winch Guide. Woods on the Greta, Yorkshire; Kirby Lonsdale, and King's Park, Edinburgh. Mr. Winch. In the Old Park and mill dingle, near Beaumaris. Welsh Bot. Lanes about Brislington and Stockwood, near Bristol, ascending to the height of many feet. E.) P. July—Aug.†

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* (According to Varro so denominated *a vinciendo*, as binding other plants with its tendrils. E.)

† (The habits of this Vetch are similar to those of *V. cracca*; but it seems more impatient of exposure. When transplanted to open situations, the produce is inconsider-

V. crac'ca. Flowers tiled: leafits spear-shaped, pubescent: stipulæ mostly entire.

Kniph. 10—*Curt.* 310—*Fl. Dan.* 804—(*E. Bot.* 1168. E.)—*Riv. Tetr.* 49, *Cracca*—*H. Ox.* ii. 4. 1.

Leafits rolled in. In corn-fields large and luxuriant, in meadows small and hoary. *Blossom* sometimes white. Linn. *Stem* when climbing on bushes three or four feet high, quadrangular, scored, slightly hairy. *Branches* numerous, short, alternate, from the bosom of the upper-leaves. *Leaves* alternate, very long; *leafits* strap-spear-shaped, oftener alternate than opposite, hairy, pointed, from ten to twelve pair. *Tendril* terminating the leaf-stalk, branched. *Stipulæ* half-arrow-shaped, pointed. *Calyx* bluish, the two upper teeth extremely short, the lowermost longest. *Flowers* small, very numerous, pendent, closely tiled. Woodw. *Blossom* bluish purple, with two deeper purple spots at the extremity of keel; *standard* heart-shaped, without a short point in the notch. *Legume* with five seeds, (smooth, brown. E.)

Tufted Vetch. (Welsh: *Tugwyg bysen.* Gaelic: *Peasair-luch na coille.*

able compared with that of *V. cracca* or *V. sepium*; though in its natural place of growth, the produce is six times that of either of these Vetches; it is likewise superior in quantity of nutritive matter. Horses, cows, and sheep ate this Vetch with more eagerness than they did the other Vetches or grasses that were on several trials offered to them. Hort. Gram. *Apion Viciæ* is plentifully found upon it. Scott beautifully describes this elegant climber, which both for foliage, flowers, and general habit, is not exceeded by any in this island.

"And where profuse the *Wood Vetch* clings
Round ash and elm in verdant rings,
Its pale and azure-pencilled flower
Should canopy Titania's bower."

The pious and philosophic Paley, in his evidence of a designed and studied mechanism in the productions of nature, adverting to the general structure of climbing plants, of which the present species affords an excellent illustration, states—"In these plants, from each joint or axilla, issue, close to each other, two shoots; one bearing the flower and fruit, the other, drawn out into a wire, a long, tapering, spiral tendril, that twists itself round any thing which lies within its reach. Considering, that two purposes are here to be provided for, (and together), fructification and support, the fruitage of the plant, and the sustentation of the stalk, what means could be used more effectual, or more mechanical, than what this structure presents to our eyes? Why, or how, without a view to this double purpose, do two shoots, of such different and appropriate forms, spring from the same joint, from contiguous points of the same stalk? It never happens thus in robust plants, or in trees." "We see not (says Ray) so much as one tree, or shrub, or herb, that hath a firm and strong stem, and that is able to mount up and stand alone without assistance, furnished with these tendrils."—"Make only so simple a comparison as that between a pea and a bean. Why does the pea put forth tendrils, the bean not; but because the stalk of the pea cannot support itself, the stalk of the bean can?—We may add also, as a circumstance not to be overlooked, that in the pea tribe these clasps do not make their appearance till they are wanted; till the plant has grown to a height to stand in need of support." Nat. Theol. How instructive are these rational deductions. If one train of thinking be more desirable than another, it is that which regards the phenomena of nature with a constant reference to a supreme intelligent Author:—for

"There's nothing bright above, below,
From flowers that bloom, to stars that glow,
But in its light the soul may see
Some feature of the Deity." E.)

E.) Hedges, shady places, meadows, fields, and willow-beds, and thickets. P. July—Aug.*

(2) *Flowers two or more together, nearly sessile.*

V. SATI'VA. Legumens mostly in pairs, upright: leafits inversely spear-shaped, blunt, notched: stipulæ toothed, impressed with a dark spot: seeds compressed, (very smooth.

E. Bot. 334. E.)—*Kniph.* 1—*Walc.*—*Riv. Tetr.* 55, *Vicia*—*Fl. Dan.* 522—*Clus.* ii. 235. 1—*Dod.* 531. 1—*Lob. Obs.* 522. 3, *and Ic.* ii. 75. 1—*Ger. Em.* 1227. 1—*Park.* 1072. 1—*H. Ox.* ii. 4. 12—*J. B.* ii. 310. 2.

(*Lower-leaves* bent back. *Stems* of various size, climbing or prostrate. *Plant* more or less hairy. Fl. Brit. E.) *Leaves* winged; *leafits* about six pair, opposite, elliptical, blunt, the mid-rib lengthened into a projecting point. *Tendril* terminating the leaf-stalk, branched. *Stipulæ* in pairs, spear-shaped, toothed, marked with a black shining root. *Flowers* mostly two together. *Blossom* reddish purple. Woodw. *Calyx* teeth nearly equal. *Seeds* black, said to be occasionally found white.

COMMON VETCH or TARE. (Irish: *Pes capul.* Welsh: *Ffugbysen mael-hawl.* E.) Dry meadows, pastures, and corn-fields. A. April—June.†

Var. 2. Leaves narrower, somewhat strap-shaped. Linn.

Riv. Tetr. 54. *V. angustif.*—*Dod.* 542. 2—*Lob. Obs.* 522. 3, *and Ic.* ii. 75. 2—*Ger. Em.* 1227. 4—*Park.* 1071. 1—*H. Ox.* ii. 4. 11—*J. B.* 312.

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* Dr. Plot, in his Nat. Hist. Staffordshire, p. 204, says, that this and the preceding species advance starven or weak cattle more than any other provender. (It is hardy, durable, nutritious, and productive, but the seeds do not readily vegetate. It should, therefore, be cultivated by planting out the roots, which are abundant, and easily separated: Salisbury. Mr. Sinclair observes that its strong creeping root must exclude it from arable lands. It might be cultivated in the manner of lucern, than which, though greatly deficient in weight of crop, it is, nevertheless, more nutritive. Though not quite so showy as the preceding species, we cannot but welcome with pleasure this gay enlivener of the lonesome lane, where

—— "Purple tassels of the tangling *Vetch*
Hang elegant."

Indeed it is worthy of introduction nearer home in the wilderness or hedges. E.)

† (The Common Vetch, (*Vicia sativa*), has been cultivated as fodder for cattle from time immemorial. Ray informs us, that in 1686, it was sown almost all over Europe, and was chiefly used in England, mixed with pease and oats, to feed horses; but it was sometimes sown separately for soiling cattle, and was reputed to cause milch cows to yield much milk. It is of a hardy growth, and when sown upon rich land, will return a large supply of green fodder for the consumption of horses, or for fattening cattle. Encyc. Agric. E.) In Gloucestershire and Worcestershire it is sown as pasturage for horses, and eaten off early enough to allow of turnips being sown the same year. The seeds are excellent food for pigeons. (Dr. Bevan observes that not only the flowers, but the young spotted leaves of Vetches are peculiarly attractive to bees; (and so likewise those of the bean); a predilection in these natural chemists conjectured to arise from the injured or diseased parts exuding a honied secretion. E.) Horses, cows, sheep, and goats eat it. (Spring Tares, as sown in March or April, are more upright and tender, but afford fine summer fodder. Though the seeds are alike in appearance, it is necessary to discriminate the kinds, or the crop may fail altogether. Samples grown in a hot house, or frame, will quickly determine the sorts. Winter Tares, sown at wheat seed-time, remaining all winter, are cut six weeks earlier in the spring. They trail on the ground. Salisbury.—Winter Tares afford most nutritive matter, and are generally preferred. Sinclair.—*Livia Craccæ* frequents this species. E.)

More common than Var. 1. So nearly allied to it that there scarcely seems to be any fixed limits between them. Linn. *Stem* trailing. *Leafits* more pointed. *Stipulæ* marked, but less distinctly, with the burnt dots. *Flowers* mostly solitary, but of the same colour of those of var. 1. It is clearly a variety of *V. sativa*, as it may be traced through all its stages from its smallest size up to the largest plants of *V. sativa*. Woodw.

V. lathyroides β, and possibly *a*. Huds. *V. sativa* γ. Fl. Brit.

Sibthorp considers this as a distinct species, and gives the following specific character. *V. angustifolia*. *Legumens* nearly sessile, about two together, expanding: *lower leafits* inversely heart-shaped, with a point in the notch; *upper ones* strap-shaped. Fl. Ox. Smith latterly entertains a similar opinion, but while admitting *V. angustifolia* of Sibthorp to be the same plant with his own, insists that "those who describe the flowers otherwise than solitary, have confounded this species with *V. sativa* var." Whereas the author of Fl. Ox. expressly declares his *V. angustifolia* to have "legumes about *two* together." How to reconcile this discrepancy we know not, unless by abandoning the supposed new species, and stating, what our specimens would appear to indicate, that neither the size of the plant, the number or colour of the flowers, nor the darker or less apparent spots of the stipulæ, afford invariable characteristics. E.)

Shotover, and divers other places. Ray. (At Weymouth. Sir T. G. Cullum. Among short grass in Richmond gardens. Sir J. E. Smith. In the lanes in the valleys of Dartmoor. E.) A. May.

V. SE'PIUM. Legumes mostly four together, upright, smooth: leafits egg-shaped, very entire, obtuse, the outer ones gradually smaller.

Kniph. 5—(*Hort. Gram.*—*E. Bot.* 1515. E.)—*Riv. Tetr.* 56, *V. sepium.*—*Fl. Dan.* 699—*Walc.*—*Trag.* 624—*J. B.* ii. 313. 2—*Ger.* 1052. 1. *and Em.* 1227. 2—*Fuchs.* 110—*Matth.* 547—*Anderson*—*Lonic.* i. 218. 1.

(*Stems* climbing with tendrils, two feet long, furrowed, but little branched. *Calyx* hairy. *Legumen* brown, smooth, dotted. Fl. Brit. E.) *Stems* upright. *Leaves* alternate, winged; *leafits* sometimes egg-spear-shaped, opposite; mid-rib lengthened out into a projecting point. *Stipulæ* half-arrow-shaped, pointed, small. *Tendril* branched, terminal. *Flowers* three or four, in the bosom of upper-leaves. *Calyx* segments nearly equal. *Blossom* dull purple. Woodw. sometimes white.

Bush Vetch. (From its habit of climbing up shrubs and bushes for support. Welsh: *Ffughysen y-cloddiau*. E.) Woods, hedges, pastures, meadows. P. May—June.*

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* This species shoots earlier in the spring than any other plant eaten by cattle, vegetates late in the autumn, and continues green all winter. But it is difficult to collect the seeds, as the pods burst and scatter them about; and, moreover, hardly a third part of them will vegetate, being made the nidus of an insect. A patch of them sown in drills in a garden, was cut five times in the course of the second year, and produced twenty-four tons per acre of green food, which when dry would weigh nearly four tons and a half. Bath. Soc. iii. Mr. Swayne has since observed to me that, though palatable to all kinds of cattle, it is difficult to cultivate on a large scale, the seeds being generally devoured by the larvæ of a species of *Attelabus*, (probably *A. punctiger* (*Apion punctifrons*, Kirby), said to resort to this Vetch only, E.) which larvæ are the prey of a species of *Ichneumon*. *Apion* (*Curculio*) *subsulcatum*, is also found upon it. (Mr. Sinclair states horses and oxen to be very fond of it. Its produce is very inferior on a clayey soil. E.)

(3) *Flowers solitary, nearly sessile.*

V. **lathyroi'des.** Legumes solitary, upright smooth: leafits about six, the lower ones inversely heart-shaped: stipulæ half-arrow-shaped, very entire: seeds cubic, warty. E. Bot.

Dicks. H. S.—Jacq. Misc. ii. 18—*E. Bot.* 30—*Fl. Dan.* 58—*Riv. Tetr.* 169. *V. minima.—Kniph.* 3—*Herm. Par.* 242.

Stipulæ not spotted. Whole plant hairy except the seed-vessels. *Root* small, fibrous, annual. *Stems* several, a foot high or less; weak, trailing. *Leafits* four to six pair, and never more, opposite, the upper ones mostly spear-shaped. *Tendrils* never branched. *Stipulæ* half-arrow-shaped, the upper spear-shaped, pointed. *Flowers* small, bluish purple, sometimes white.

The true leading characters of this species are, the blossom being scarcely longer than the calyx, the seeds cubic, and the tendril never branched. Woodw. In the fig. of E. Bot. Fl. Dan. and Kniphofius, the tendrils are wanting; in those of Jacquin and Rivinus they are represented as unbranched, agreeable to Mr. Woodward's observation, but in Dickson's specimens, published in his fourth fasciculus of dried plants, the tendrils are branched.

V. lathyroides, var. γ. Huds. *Ervum soloniense.* Sp. Pl. fid. Sm.

STRANGLE VETCH or TARE. SPRING VETCH. Dry pastures, gravel pits, and corn-fields, in gravelly, sandy, and chalky soils. King's Park, Edinburgh. Lightfoot. In the dry parts of Hyde Park. Mr. Dickson. Norfolk. Mr. Woodward. (Near Beverley. Teesdale, In the warren at Esher, Surry. Mr. Borrer. Swefling, near the church, and Aldborough Common, Suffolk. Rev. G. Crabbe. Near the signal house at Westleton, Suffolk. Mr. Davy. Bot. Guide. On the chalky banks near Greenhithe. Sherard. Sea shore south of Shields; and salt meadows below Gateshead. Mr. Winch. On the side of the bridle road from Spernall to Studley, Warwickshire. Purton. E.) [illegible]. A. May.

V. **lu'tea.** Legumes sessile, reflexed, hairy, solitary: stems diffuse: standard smooth: (stipulæ coloured. E.)

(*Hook. Fl. Lond.* 74—*E. Bot.* 481. E.)—*H. Ox.* ii. 21. *row* 2. *f.* 2—*J. B.* ii. 313. 1.

(*Stems* one to two feet long. *Bloss.* sometimes striped, or nearly white. E.) *Leaves* alternate; *leafits* three to five pair, mostly alternate, oblong, blunt, and dentate, or strap-spear-shaped. *Stipulæ* spear-shaped, minute. *Tendrils* terminal, simple, or divided into two or three. *Blossom* pale yellow. *Seed-vessel* woolly. Woodw. (Permanently differing from the still more rare *V. hybrida,* in the smooth *vexillum* of the flower, in the dark spot upon the stipule, and in the much less obtuse leaves. D. Turner. E.)

ROUGH-PODDED YELLOW VETCH. (On the shore near Shoreham. Mr. J. Middleton. On the beach at Orford, about half a mile from the river's mouth. Mr. Humphrey. Sand pit on the side of Glastonbury Tor Hill. Mr. Dawson Turner. Bot. Guide. About Pinxton and Derby. Pilkington. Near Keswick. Hooker. Sea side west of North Queensferry. Mr. G. Don, in Grev. Edin. E.) (P. Aug. E.)

V. **hy'brida.** Legumes sessile, solitary, reflexed, hairy: standard villous: (leafits abrupt. E.)

Jacq. Hort. 146—(*E. Bot.* 482. E.)—*J. B.* ii. 314. 1.

Leafits inversely egg-shaped, dentate, small, sprinkled with hairs. *Stipulæ* not brown, but entirely green *Flowers* yellow, greyish above, hairy. In other respects accords with *V. lutea.* Linn. (Rather taller than the preceding, and less diffuse. *Leafits* more abrupt. *Stipulæ* wholly green. *Flowers* rather larger, and with a reddish not grayish tinge externally. But the best characteristic is supposed to be the *standard* being clothed with hairs. E.)

(Hairy-flowered Yellow Vetch. E.) Meadows and pastures. Glastonbury Tor Hill, as well as *V. lutea;* Ray and various subsequent authorities, and scarcely any other station known. E. P. June—Aug.

V. læviga'ta. Legumes sessile, solitary, reflexed, smooth: stems nearly upright: leaves very smooth.

E. Bot. 483.

Leaves and whole *plant* entirely smooth. *Stipulæ* green, or pale brown. *Flowers* like those of *lutea,* but their calyx-teeth are generally more equal in length. In colour they are for the most part less yellow, and sometimes quite blue, as represented in the figure, but both species are extremely variable in that respect. *Legumes* quite smooth in every stage of their growth, and contain rarely more than five seeds. E. Bot.

Smooth-podded Sea Vetch. About Weymouth. (Portland Island, Chesil Bank, &c. E.) P. July—Sept. E.)

V. bithyn'ica. Legumes on fruit-stalks, solitary, upright, rough: leafits two pair, oval-spear-shaped: stipulæ toothed.

Jacq. Hort. 147—(*E. Bot.* 1842. E.)—*Allioni* 26. 2.

(*Stems* many, climbing with tendrils, branched, angular, furrowed, smooth, about eighteen inches long. *Leaves* in two pairs, with *leafits* large, egg-spear-shaped, sharp-pointed, slightly hairy on the under surface. *Stipulæ* large, half-arrow-shaped. *Flowers* axillary, solitary; on fruit-stalks of various length, very rarely two-flowered. *Seeds* five or six, roundish, smooth, mottled with black and grey. Fl. Brit. (The breadth of the *leafits* is variable, sometimes approaching to strap-shaped. E.) *Seeds* protuberating. *Flowers,* standard and keel reddish purple, wings yellowish white.

(Rough-podded Purple Vetch. E.) Gravelly corn-fields, pastures, and ditch banks. Near Doncaster. Mr. Tofield. Woods near Clifton upon Teme, Worcestershire. Dr. Stokes. Portland Island half a mile to the left of the Ferry, on loose sand banks. Mr. Stackhouse. (Isle of Purbeck; and near Southwick, on the cliffs towards Brighton. Mr. Borrer. By the road side about two miles from St. Asaph on the way to Chester. Rev. H. Davies. On most of the red cliffs of the Devonshire coast. Rev. Dr. Beeke, in Bot. Guide. Sunderland Ballast Hills. Mr. Winch. E.) P. July—Aug.

ER'VUM.* (*Stigma* capitate, pubescent all over. E.)

E. tetrasper'mum. Fruit-stalks mostly two-flowered: pods smooth: seeds four.

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* (From *eruo,* to pluck out; as necessary to be eradicated from the growing corn; to separate the tares from the wheat. E.)

Curt.—*Riv. Tetr.* 53, *Cracca minor, siliquis gemellis*—(*E. Bot.* 1223. E.)—*Ger.* 1052. 2—*Fl. Dan.* 95—*J. B.* ii. 315. 2—*H. Ox.* ii. 4. 16—*Anderson.*

Stem two-edged, nearly quadrangular. *Leafits* generally ten, and mostly alternate. *Fruit-stalks* of a hair-like fineness, with one or two flowers. *Flowers* small, violet, often blood-coloured. *Legume* oval-oblong, smooth. Linn. (*Flower-stalks* and *calyx* besprinkled with soft hairs. E.)

(Mr. Woodward observed a lower and much branched variety with five, six, or seven, rarely four seeds, in gravelly soil, near Cambridge. E.)

SMOOTH-PODDED TARE. (Welsh: *Corbysen lefn bedair ronynog.* E.) Corn-fields, hedges, and borders of ploughed fields. A. June.

E. HIRSU'TUM. Fruit-stalks many-flowered: seeds two: (pods rough with hairs. E.)

Dicks. H. S.—*Curt.*—(*E. Bot.* 970. E.)—*Dod.* 542. 3—*Lob. Obs.* 522. 2, *and Ic.* ii. 76. 1—*Ger. Em.* 1228—*Park.* 1069—*Riv. Tetr.* 53, *Cracca minor.*—*J. B.* ii. 315. 1—*Fl. Dan.* 639.

(Much resembling the preceding species, but the stem smoother, leafits rather broader and more reflexed: the whole *plant* somewhat larger, two or three feet long, slender, climbing. E.) *Stems* weak, much branched, angular, scored. *Leaf-scales*, the lower with two or three awl-shaped teeth, the upper awl-shaped, entire. *Leafits* mostly strap-shaped, eight to twelve pair, somewhat alternate, terminated by a branched tendril. *Fruit-stalks* axillary, shorter but not so slender as in *E. tetraspermum.* *Flowers* two, three, or four, on very short pedicles; when two, separate; if three, two of them together; if four, in pairs. *Legume* hairy. Woodw. *Flowers* small, pale purple, or white.

ROUGH-PODDED TARE. (Welsh: *Corbysen flewog.* E.) Sandy corn-fields and meadows. (A. June—Sept. E.)*

ORNI'THOPUS.† *Seed-vessel* cylindrical, articulate, curved.

O. PERPUSIL'LUS. Leaves winged: legumens incurved, jointed: (flowers capitate, bracteated. E.)

(*Curt.*—*E. Bot.* 369. E.)—*Kniph.* 7—*Dod.* 544—*Lob. Obs.* 527. 2, *and Ic.* ii. 81. 2—*Park.* 1092. 1—*H. Ox.* ii. 10. 13—*Lob. Adv.* 403. 1, *and Ic.* ii. 94. 1—*Ger. Em.* 1241. 4—*Park.* 1092. 1, *of chap.* 23.

Root slender, nearly as long as the stems; lateral fibres few. *Stems* trailing, from one to six inches high. *Root-leaves* numerous, prostrate, the lowermost sometimes on leaf-stalks, the rest sessile; *leafits* egg-shaped, or elliptical, opposite or alternate, from three to fourteen pairs, with an odd one smaller. *Flowers* one to five, terminal, opposite a leaf. *Le-*

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* Horses, cows, goats, and sheep eat it. Linn. In wet seasons whole fields of corn have been overpowered and wholly destroyed by it. (Hence it is sometimes called *Strangle Tare.* This evil is occasioned both by the wild and cultivated Tares being mixed with samples of seeds of wheat and barley. When ground in the flour they affect it with a strong disagreeable flavour. Mr. Holdich suggests that field tares should never be suffered to go to seed, but rather be fed off and ploughed down, soon enough to prevent their spreading. Both these *Tine Tares* not only illustrate the old adage, that "ill weeds grow apace;" but that they likewise increase by superabundant fertility; for it appears from experiment, that a single seed will, by the produce of one plant only, multiply itself a thousand fold in a very short time. E.)

† (From ορνις, ορνιθος, a bird; and πους, a foot; the curved legume exactly resembling a bird's foot. E.)

gume slightly compressed, bowed inwards. St. *Leafits* set with very fine silvery hairs. *Blossom,* standard very slightly notched at the end, marked with crimson lines, the claw yellowish brown; *wings* white, with a reddish tinge; *keel* pale straw colour. *Seeds* six. A beautiful plant, and not uncommon on dry heaths and downs; (varying from one inch to a foot in the extent of its branches: and remarkable for its seed-vessel, (*lomentum* of Willdenow, as being articulate, each cell containing one seed, and separating transversely at the joint) resembling a bird's foot. E.)

Var. 2. Flowers entirely yellow. Each leafit with a dark purple blotch. About Sidmouth.

BIRD'S-FOOT. (Welsh: *Troed yr aderyn cyffredin.* E.) Sandy banks, road sides, heaths and pastures. Near Lichfield. Mr. Whately. Winson Green, near Birmingham. Stokes. Brandon Hill, Bristol. Mr. Swayne. Near Knaresborough. Mr. Robson. (Park quarry, Liverpool. Dr. Bostock. Moushold Heath, near Norwich, and elsewhere in Norfolk. Mr. Woodward. Dorking, Ryegate, Hampstead, and Sunderland Ballast Hills. Mr. Winch. Kinver, Staffordshire. Coleshill Heath, Warwickshire; Malvern, Worcestershire. Purton. In Anglesey. Welsh Bot. North Queensferry. Dr. Graham. Grev. Edin. E.) Washwood Heath, near Birmingham. A. May—Sept.

HIPPOCRE'PIS.* *Seed-vessel* many-celled, compressed, incurved, with several notches along one of the seams.

H. COMO'SA. Legume on fruit-stalks, crowded, bowed, serpentine.

Jacq. Austr. 431—*Riv. Tetr.* 97. 2, *Ferrum equinum comosum*—*E. Bot.* 31 —*Col. Ecphr.* 301. 1—*Dicks. H. S.*—*Park.* 1092. 4—*H. Ox.* ii. 10. 3— *Ger.* 1056. 2—*J. B.* ii. 348. 1.

Stems several, ascending, a span high, smooth. *Stipulæ* rather spreading. *Leafits* fifteen, oval-strap-shaped, expanding, rather firm in texture. *Fruit-stalks* between angular and scored, longer than the leaves, from the bosom of the upper leaves two or three. *Umbel* orbicular, with eight flowers. *Blossoms standard* somewhat arched, striated, underneath, not bent back at the edges except at the base, which is indented, forming a small cavity on each side. Linn. *Root* thick, woody. *Stipulæ* in pairs, oval, blunt. *Leafits* seldom more than six pairs, opposite, heart-shaped, or elliptical and indented. *Flowers* six to ten, disposed in a circle round the summit of the fruit-stalk, after flowering bent down. Pedicles slightly hairy, very short. Woodw. *Plant* sometimes quite free from hairs. *Blossom* dull yellow, with brownish streaks. (*Legumes* above an inch long. E.)

TUFTED HORSE-SHOE VETCH. Meadows and pastures in calcareous soil. Chalky grounds about Gogmagog Hills; between Northfleet and Gravesend; Kent, Surrey, and Bedfordshire. Limestone rocks, about Malham, Settle, Giggleswick, Kilnsay, and Wharf, Yorkshire. South side of Bredon Hill, Worcestershire, below the camp. Nash. Swaffham, Norfolk. Mr. Woodward. On the edge of the precipice all along Shellwith Hill. Mr. Jackson. On Wick Cliffs in great plenty, and on St. Vincent's Rocks. Rev. G. Swayne. On the high grounds North of Marlborough. (Under Dover cliffs. Mr. W. Christy. 'On Cronkley Fell, at an elevation of above 1,500 feet.' Mr. Winch. About Dundonald castle, near Ayr. Mr. Reid. Hook. Scot. E.) P. May—Aug.

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* (From ἱππος, a horse; and κρεπις, a shoe; to which the figure of the legume may be compared. E.)

HEDYS'ARUM.* *Keel* broad and blunt: *legume* compressed, jointed, one seed in each joint.

H. ono'brychis. Leaves winged: legume with one seed, prickly: wings long as the calyx: stem elongated.

Dicks. H. S.—Kniph. 8—*Jacq. Austr.* 352—*E. Bot.* 96—*Riv. Tetr.* 2. *Onobrychis—J. B.* ii. 335. 2—*Ger.* 1063. 1—*Clus.* ii. 232. 2—*Dod.* 548. 2 —*Lob. Obs.* 527. 1, *and Ic.* ii. 81. 1—*Ger. Em.* 1243. 1—*Park.* 1082. 1.

(A very showy plant. E.) *Stems* cylindrical, scored, (two or three feet long. E.); at first trailing, but when in flower ascending. *Stipulæ* in pairs, oval-spear-shaped, terminated by a long point, membranous at the edges, sometimes fringed with a few hairs. *Leaf-stalks* furrowed above, slightly hairy. *Leafits* eight to ten pair, with an odd one; those of the lower leaves elliptical, of the upper spear-shaped, or strap-spear-shaped, all with projecting points at the end, the uppermost with the mid-rib beneath and edges fringed. *Fruit-stalks* long, slightly hairy. *Bunches* long, closely tiled upwards. *Flowers* numerous. *Floral-leaves* awl-shaped, longer than the pedicles. *Calyx* one fourth the length of the blossom. Woodw. *Calyx,* segments spear-shaped, hairy, the two upper distant, the lowermost the shortest. *Blossom standard* egg-shaped, with a little tooth in the notch at the end, red in the middle, with eight or ten deeper coloured lines, white at the edges, and mottled with red, the lines on the outside fainter, but more numerous; *wings* very small, not half the length of the calyx, spear-shaped, red and white; *keel* reddish, with deeper coloured lines. *Legume* oblong, hairy.

Saintfoin. Cock's-head. (Welsh: *Codawg.* E.) Meadows and pastures, particularly in chalky soils, or magnesian limestone. Burnham, Norfolk. Mr. Crowe. Gogmagog Hills, near Cambridge. Mr. Woodward. Wick Cliffs, near Bath. Mr. Swayne. (On Harton-Down Hill, and in fields near Ryhope, Durham. Mr. Winch; from which the farmers, who in that neighbourhood cultivate a sterile calcareous soil, might take a profitable hint. About Grafton and Bilsley, Warwickshire. Purton. In a park between Pentraeth and Llanddyfnan, Anglesey. Welsh Bot. Road side about half way between Teignmouth and Torquay. E.) Wilts, and the higher grounds of Gloucestershire, frequent, both wild and cultivated. P. June—July.†

ASTRAG'ALUS.‡ *Caps.* generally two-celled; gibbous: the solitary filaments cylindrical.

(1) *Stems trailing, leafy.*

A. hypoglot'tis. Stem prostrate: flowers in roundish heads: legumes egg-shaped, compressed, hairy, grooved, the point reflexed: leafits blunt.

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* (From ἡδυς, sweet; and αρον, perfume; certain species exhaling an agreeable scent. E.)

† This is cultivated like clover for feeding cattle, and is particularly advantageous in dry hilly situations, and chalky soils, (being equally valuable both green and in hay. In the south of England, Mr. Salisbury states it is the life and support of the upland farmer. Mr. Sinclair proves that for sheep especially, it is more economical than turnips. For various details respecting its uses and culture, see Young's Annals, Hort. Gram., &c. E.)

‡ (From αστραγαλος, a bone of the foot; which the legume of this plant somewhat resembles. E.)

Dicks. H. S.—E. Bot. 274—*Ray* 12. 3—*Fl. Dan.* 614.

Stems (three to six or nine inches long, E.) weak, as many as six or upwards, towards the base lying close to the ground, the heads of flowers rise up at some distance from the root, as if without any leaves or stems belonging to them. *Leafits* six to twelve pair, with an odd one elliptical, or spear-shaped, hairy, especially on the upper side, opposite. *Leaf-stalks* hairy, furrowed. *Stipulæ* egg-spear-shaped, sessile, in pairs, fringed. *Fruit-stalks* mostly from near the ends of the branches, ascending, larger than the leaf-stalks, about as long as the leaves, hairy, hairs white towards the base, black above. *Flowers* five to six, rarely more, in a close head, on short pedicles. *Floral-leaves* oval-spear-shaped, one to each pedicle. *Calyx* beset with black hairs; teeth short, nearly equal. *Blossom* bluish purple, sometimes white. Woodw. Dr. Afzelius first satisfied me that what had been taken for *A. arenarius* by Hudson, Lightfoot, and Relhan, was *A. hypoglottis* of Linn. Mant. which information is since confirmed by specimens received from Professor Thunberg.

PURPLE MOUNTAIN MILK VETCH or COCK'S-HEAD. *A. Danicus.* Oed. Retz. With. Ed. ii. Sandy and chalky meadows and pastures. Gogmagog Hills, Newmarket and Royston Heaths. Ray. About Hazlewood, Yorkshire; Pigburn Fields, near Doncaster. Richardson. Hills in the King's Park, Edinburgh; sands of Musselburgh; Hill of Moncrief, near Perth; and York cascade at the Duke of Athol's seat at Blair. Lightfoot. Side of Bredon Hill, Worcestershire, near the camp. Nash. About Thorp-Arch, Yorkshire. Mr. Wood. Swaffham Heath, Norfolk; Hills near Dunstable. Mr. Woodward. Coast of Augus-shire, plentiful. Mr. Brown. (On the Links at Tynemouth; Dunstanburgh; Holy Island; and on Ratcliff Crag, Northumberland. Winch. E.) P. June—July.

A. GLYCYPHYLLOS. Stems prostrate: legumes obscurely triangular, incurved: leaves longer than the fruit-stalks: leafits oval.

Dicks. H. S.—E. Bot. 203—*Fl. Dan.* 1108—*Riv. Tetr.* 103, *Astragalus*—*Kniph.* 3—*Trag.* 599—*J. B.* ii. 330—*Clus.* ii. 233. 1—*Lob. Obs.* 526. 1, *and Ic.* ii. 80. 1—*Ger. Em.* 1233. 2—*H. Ox.* ii. 9. 8.

Stems (two or three feet long, E.) much branched, smooth. *Leaves* alternate. *Leafits* usually in five pairs, with an odd one, mostly opposite, sessile, or on very short foot-stalks, smooth, very entire. *Leaf-stalks* furrowed above. *Fruit-stalks* from the bosom of the leaves. *Flowers* greenish yellow, numerous, in a close bunch, on short pedicles. *Stipulæ* awl-shaped, one at the base of each pedicle. Woodw. *Leaves* longer than the fruit-stalks. *Leafits* rather pointed, slightly hairy underneath. *Floral-leaves* very slender, as long as the calyx. *Pollen* orange-coloured. (*Legume* about an inch long. E.)

(SWEET MILK VETCH. E.) WILD LIQUORICE. Meadows, pastures and ditch-banks, especially in a calcareous soil. About Charlton, (and in a wood, near Sceene Farm, Cheriton. Hutchinson, in Smith's Obs. E.) Kent. In the ditch of Northampton Castle. Mr. Wood. Near Diss, Norfolk, and Coddenham, Suffolk; in Huntingdonshire. Mr. Woodward. Baydales, Darlington. Mr. Robson. Many places on the coast between Nether Cramond, and Queensferry. Maughan, in Grev. Edin. On the banks of Weer, near Durham; and Tyne, above Ovingham. Mr. Winch. Oversley and Grafton, Warwickshire, Cleve Hill. Worcestershire; Buck Orchard, Hords Park, Salop. Purton. E.) P. June—July.*

* (From the resemblance of a cluster of the pods to the fingers of an open hand, this plant has been called *Ladies-fingers;* or *Crow-toes* from their fancied similitude

(2) *Stalk bare, without a leafy stem.*

A. URALEN'SIS, (Stemless: flower-stalk upright, longer than the leaves: legumes awl-shaped, villous, upright: leafits silky. E.)

Jacq. Ic. i.—(*E. Bot.* 466. E.)—*Lightf.* 17. *at p.* 401—*Hall. It. Helv.* 2. 1, *in Opusc. at p.* 308, *and Stirp.* 5. 3, *at p.* 155, *and Hist.* 14. 3, *at* 1. *p.* 195.

Leafits twenty to thirty. *Spike* short, rather oblong. *Flowers* sessile, *Calyx* egg-shaped, inflated; teeth short. *Blossom* purple or violet, rarely white. Whole *plant*, the blossoms excepted, covered with white shining soft hairs. *Leaf-stalk* surrounded at the base with spear-shaped withered scales. *Leafits* oval, oval-spear-shaped, and spear-shaped, with an odd one. *Fruit-stalks* much thicker than the leaf-stalks, but little longer than the leaves. *Flowers* eight or ten, crowded. *Floral-leaves*, the lowest longer, the rest shorter than the calyx. Woodw.

(HAIRY MOUNTAIN MILK VETCH. E.) Mountainous and alpine pastures in Scotland. Cromarty, and at the Bay of Farr. Mr. Robertson. On Carn-dearg, one of the lower heads of Ben Squilert, a high mountain of Glen Creran, in Upper Lorn, in a light sandy soil. Dr. Stuart. (On the top of North Queen's Ferry-hill, Fifeshire, but not so large as on Ben Lawers, where it was first observed by Mr. Don. Mr. Brown. E.) P. July.

A. CAMPES'TRIS. Stem none: stalk ascending: calyx hairy: leafits spear-shaped, acute: legumes hairy, inflated, erect: leafits somewhat hairy.

E. Bot. 2522—*Fl. Dan.* 1041.

Stalk sometimes decumbent. *Flowers* cream-coloured, or buff, with more or less of a purple tinge on the keel and wings. *Leafits* more or less silky. *Legume* more egg-shaped and inflated than in *A. uralensis*, covered with short, spreading, black as well as white hairs.

YELLOWISH MOUNTAIN MILK VETCH. *A. campestris.* Linn. Willd. *A. uralensis.* Oed. Discovered by Mr. G. Don, in great abundance, on a rock on one of the mountains at the head of Clova, Angus-shire, near the White Water. P. July—E. Bot. E.)

TRIFO'LIUM.* *Flowers* mostly capitate: *Capsule* or *Legume* scarcely longer than the calyx; not opening, but falling off entire.†

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to the toes of that bird. The more proper English name has been derived from its being supposed to increase the quantity of rich milk in cows feeding on it. It has the advantage of growing on the poorest soil, even on obdurate clays, where scarcely any other plant will vegetate. It will grow as tall as clover, and make exceedingly fine hay, though scarcely attaining perfection the first few years. When fully established, it produces annually a larger supply of fodder. It is peculiarly eligible in very poor lands; but, advancing slowly after once cut, it is greatly inferior to clover. The sweetish taste of the leaves is said to change on the palate to a disagreeable bitter. Swine refuse it. E.)

* (From τρεις three; and φυλλον, a leaf; descriptive of its ternate leaves. E.)

† (Sir H. Davy has shown that the nutriment of Clover contains a greater proportion of bitter extractive and saline matter than the proper grasses; and that when pure Clover hay is to be mixed as fodder, it should be with summer hay rather than after-math hay. Agric. Chem. The flowers of all the species, dried and powdered, may be made into bread, which, in times of scarcity, has preserved the inhabitants of less hospitable climates from perishing. Trefoils may also be deemed the husbandman's weather-glass, always cor-

(1) MELILOTS. *Capsule naked, one-celled, containing several seeds.*

T. **ORNITHOPODIOI'DES.** Capsules eight-seeded, mostly three together, twice as long as the calyx : stems declining.

Curt. 124—*Fl. Dan.* 368—(*E. Bot.* 1047. E.)—*Ray* 14, 1, *at p.* 332—*Pluk.* 68. 1.

Stems prostrate, two to five inches long, disposed in a circular manner. *Leafits* three, sessile, inversely heart-shaped, sharply and distantly serrated. *Leaf-stalks* long, slender. *Stipulæ* spear-shaped, sharply pointed, large, in pairs at the base of the leaf-stalks. *Fruit-salks* axillary, much shorter than the leaf-stalks. *Flowers* from one to four, but usually two on a fruit-stalk, parallel to each other. *Calyx* more than half the length of the blossom, pale green, with deeper lines, cloven half-way down ; segments nearly equal, awl-shaped. *Blossom* pale red. *Legumes* short, thick, terminated by a short point turned downwards, which gives them something of the appearance of a bird's claw. Woodw. *Root* fibrous, furnished with small fleshy knobs, as in *Vicia lathyroides* and others of this Class, apparently to resist accidental drought, during summer. E. Bot. E.)

BIRD'S-FOOT TREFOIL. (Welsh: *Corfeillionen wen. Trigonella.* De Cand., but not precisely corresponding with any known genus. E.) In fine short dry sandy pastures and meadows, and amongst corn, (but not readily perceived without near inspection. E.) Half a mile from Tadcaster, towards Sherborn; near Oxford; Tolesbury, Essex, on sandy-banks by the sea-side. Ray. Tothill Fields, Westminster. Doody. Blackheath, near London. About Marazion and Penzance, Cornwall. Hudson. Moushold Heath, near Norwich. Mr. Pitchford. On Henllan hill, near Garn, Denbighshire. Mr. Griffith. Near the boat-house Sandgate, Kent. Mr. J. E. Smith. On the Green at Beaumaris. Welsh. Bot. Fisherrow and Musselburgh Links. Maughan, in Grev. Edin. E.)
A. June—July.

(T. **OFFICINA'LE.** Capsules in unilateral bunches, mostly two-seeded, hairy, wrinkled, stem upright. E.)

Kniph. 7—*Fl. Dan.* 934—(*E. Bot.* 1340. E.)—*Gmel.* iv. 7—*Sheldr.* 72, *Common Melilot*—*Ludw.* 113—*Dod.* 567. 2—*Lob. Obs.* 501. 2, *and Ic.* ii. 43. 2—*Ger. Em.* 1205. 4—*Park.* 719. 1. 2—*Ger.* 1034. 3—*Riv. Tetr.* 6, *Melilotus*—*Blackw.* 80—*Matth.* 1162—*Trag.* 591—*H. Ox.* ii. 16, *row* 2. 2—*Fuchs.* 749—*J. B.* ii. 370—*Ger.* 1034. 4—*Lonic.* i. 106. 1.

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tracting their leaves when storms impend. The different kinds exhibit a striking exemplification of spontaneous movement in vegetables, both leaves and flowers appearing to court the light with avidity, by regularly following the course of the sun. They afford nourishment and protection to various insects, among which will be found *Apion flavifemoratum*, *A. Melilotum*, *A. vicinum*, *A. Loti*, *A. assimile*, *Lycæna Idas* and *Alsus*, *Geometra clathrata* and *retata*, *Papilio Cinxia*, and *Phalæna Fascelina* ; also the caterpillar of *Phalæna* (*Bombyx*) *Trifolii*, whose *pupa* is sometimes surreptitiously occupied by the *Ichneumon chrysopus*, which rests therein till matured. Vid. Linn. Tr. v. iii. t. 2. The under surface of the leaves of several species of *Trifolium* are liable to be infested with minute black spots, which prove to be *Polythrincium Trifolii*, Gret. Scot. Crypt. 216., and under the microscope are each found to consist of " little roundish tufts of filaments, densely crowded, semi-transparent, erect, simple, with numerous articulations ; sporidia two-celled, scattered among the filaments." E.)

Leafits of the lower-leaves oblong-wedge-shaped, those of the upper elliptical, sharply serrated, toothed. *Stipulæ*, the lower with three or four awl-shaped teeth; the upper spear-shaped, entire. *Bunches* long. *Flowers* bent back, scattered. *Pedicles* short, hairy. *Floral-leaves* awl-shaped, small, one at the base of each pedicle. *Calyx* one third the length of the blossom, clefts extending half way down, segments nearly equal. Woodw. *Blossom* yellow. (*Stem* about two feet high, branched, furrowed. When dried, this plant exhales a fragrant odour like that of *Anthoxanthum*. E.)

(A variety bearing *white* blossoms has been observed by Mr. Winch growing on Willington Ballast, Durham; and on the Ballast Hills below Gateshead. E.)

COMMON MELILOT. KING'S CLOVER. HART'S CLOVER. (Welsh: *Meillionen y ceirw*. E.) Corn-fields, meadows, and ditch banks, in stiff soil. A. June—July.*

(2) *Legume covered; many-seeded.*

T. (RE'PENS. Heads globose: flowers somewhat stalked: legume four-seeded: stem creeping. E.)

Curt. 193—*Fl. Dan.* 990—*E. Bot.* 1769—*Mich.* 25. 3 *and* 4—*Riv. Tetr.* 17. 2, *T. repens*—*Dod.* 565—*Lob. Obs.* 493. 2, *and Ic.* ii. 29. 1—*Ger. Em.* 1185. 1—*Park.* 1110. 1—*J. B.* ii. 380. 3—*H. Ox.* ii. 12, *row* 1. 2.

(*Stems* six to eighteen inches long, solid; by which latter circumstance, according to Smith, it is essentially distinguished from *T. hybridum* of Linn. E.) *Stipulæ* in pairs, oval-spear-shaped, lengthened out into an awn. *Leafits* varying in shape, but generally oval and blunt, sharply serrated, with a strong mid-rib, and numerous branching ribs terminating in the serratures. *Leaf-stalks* and *fruit-stalks* long, upright, rising nearly at right angles from the stem. *Flowers* in a close head, upright, when shrivelling bent downwards. *Pedicles* short. *Stipulæ* small, awl-shaped, one to each pedicle. *Calyx* teeth nearly equal, the two upper rather longer, reddish. *Blossom* white. *Standard* oval. Woodw. *Leafits* inversely-heart-shaped, and egg-shaped. *Calyx* greenish white, with purple streaks. When the flowering is partly over, the heads assume a peculiar appearance, the florets diverging from the centre, spreading outwards and downwards like an umbrella.

Var. 2. *Bloodwort.* Leaves a deep purple.

Var. 3. *Proliferous.* Small heads of leaves growing out of the flowers.

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* This is more fragrant when dry than when green. (It was formerly considered emollient and digestive, and therefore used in fomentations and cataplasms, but it has been laid aside as too acrid and irritating. E.) A water distilled from the flowers possesses but little odour in itself, but improves the flavour of other substances. Horses are extremely fond of it; cows, goats, sheep, and swine eat it. (The capsules containing the seeds are so tough and adhesive, that even thrashing will not dislodge them; so that in samples of wheat, the wrinkled capsule is called the seed. Prof. Martyn. Mr. Holdich, in his Essay on the Weeds of Agriculture, asserts this to be the most pernicious seed in wheat, a few seeds communicating a very strong and disagreeable smell to the flour. In arable land, it cannot be too much guarded against, and ought never to be sown with seed corn. It should be sedulously rooted up by weeding in the spring, for where it has once got in the land, it propagates itself by scattering many seeds before the crop be ripe. It does not appear to have been cultivated in England. E.)

Canal between Limehouse and Bromley. Curtis.

(Var. 4. *T. repens hybridum.* Huds. *T. hybridum.* With. Ed. 3 and 4, but not of Linnæus. It is distinguished by its ascending and more branched stem.

Moist pastures near Peckham and Battersea. Hudson. E.)

White Trefoil. Dutch Clover. (Welsh: *Meillionen wen y waun.* Gaelic: *Seamar, Seamrag.* E.) (The *Shamrock* of Ireland. E.) Meadows and pastures. P. May—Sept.*

(3) *Calyx villous.*

T. subterra'neum. Heads hairy; three or four-flowered: involucrum central, reflexed, rigid, stellate, inclosing the fruit.

Curt. 128—(*E. Bot.* 1048. E.)—*Riv. Tetr.* 17. 2, *T. subterraneum*—*Ray.* 2—*Barr.* 881—*H. Ox.* ii. 14, *row* 1. 5.

The white filaments, which put forth from the extremities of the fruit-stalks, resemble roots, but they do not penetrate the earth as supposed by Dillenius, but rise upwards, their ends expanding into little star-like points, and finally inclose the seed-vessels in a kind of prickly head. Curt. *Stems* (three to six inches long. E.) numerous, prostrate, disposed in a circle round the root. *Stipulæ* in pairs, oval-spear-shaped. *Leaf-stalks* long, downy. *Leafits* sessile, inversely, heart-shaped, blunt, obscurely serrated, downy, especially underneath. *Fruit-stalks* from the bosom of the leaves, the lower shorter, the upper as long as the leaves, with three or four flowers. *Floral-leaves* none. *Calyx* cylindrical, cloven half way down; segments nearly equal, bristle-shaped, fringed with soft hairs. *Blossom* white; standard oval, claw long and narrow. Woodw. *Tube* of the blossom very long. There is something so singular in this plant, that its economy merits further inquiry. The strong horny stellated substance which grows from the extremity of the fruit-stalk, stretching its rays outwards and downwards, incloses and presses the capsules to the ground, thus partially burying them. (Mr. G. E. Smith observes, that its seedlings are distinguished in winter by the varied pale and dark spotted pattern upon their leaves; and that upon the sandy ground below Folkstone church, this plant, with its singular stellated floral-radicles, may be studied to advantage. E.)

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* (*Dutch Clover* is so called from the seeds being usually imported from Holland; but as it is probable it might be raised as well in England, and the quantity required for annual sowing is prodigiously great, one house alone supplying forty or fifty tons, it must be highly desirable that such an article of commerce should be provided at home. E.) Horses, cows, and goats eat it. Sheep are not fond of it. Swine refuse it. Linn. (This species, being remarkably sensible to atmospheric changes, affords a good rustic hygrometer. The leaves are always relaxed and flaccid in dry weather, but erect in moist or rainy. E.) Wherever this plant abounds spontaneously, it is considered as an indication of the goodness of the soil. The richness of meadows and pastures is naturally owing to their abounding principally with the Trefoils, and others of the same class, with a due mixture of the more acceptable grasses. Pulteney's View. (On the soil of our moors, (in the north of England) being turned up for the first time, and lime applied, White Clover appears in abundance; a circumstance in no way satisfactorily accounted for, but which is known to take place in wastes both in Britain and North America. See Pursh's Flora Americana, ii. 477. Winch. In such situations the seed might have lain dormant a very great length of time, till stimulated into vegetation by the application of lime. Ashes have in the same manner been found suddenly to augment the growth of clover before scarcely observable, to the great surprize of farmers. Dutch Clover creeps on the ground and forms a fine bottom. It has not the property of *blowing* cattle in so great a degree as other sorts. Salisbury. Top dressings and frequent use of the roller encourage its growth wonderfully. Pure Clover may be very hurtful to sheep. Hort. Gram. It is peculiarly subject to depredation from the small weevil, *Apion flavipes*, which deposits its eggs in the heads of this species only. Kirby. The Welsh Apostle Maenwyn, better known as St. Patrick, landing near Wicklow, A. D. 433, on a mission from Pope Celestine, met with much opposition to his doctrine, till plucking a Trefoil, and thereby illustrating the mystery of the Trinity in Unity, his Pagan hearers are said to have become converts, and were baptized. Hence originated the custom of wearing the *Shamrock*, (a bunch of Trefoil) on the anniversary of that Saint; and hence has it become the national emblem of Ireland as is the Rose that of England, or the Thistle of Scotland. E.)

Subterraneous Trefoil. (Welsh: *Meillionen wen ymgydd.* E.) Barren heaths and pastures in sandy or gravelly soil. About London, frequent. Gamlingay by the wind-mill; and near Whitewood, Cambridgeshire. Between Eltham and Deptford, Ray. Bath Hills, near Bungay. Mr. Woodward. Mangotsfield Common, near Bath. Rev. G. Swayne. Salt marsh at Lymington, between the town and the salt pans. (On Sunderland Ballast Hills. Mr. Weighill. On the sandy pasture at the bottom of Bwlan farm, near the bridge which leads from it to Aberfraw Common, Anglesey. Welsh Bot. On the bank below the house called Avon Farm, near Keynsham, Somerset. E.) A. May—Aug.

T. (glomera'tum.) (Heads sessile, hemispherical, axillary, smooth: calyx furrowed: teeth heart-shaped, expanded, equal: stems prostrate. E.)

Curt. 227—(*E. Bot.* 1063. E.)—*Barr.* 882—*Pluk.* 113. 5.

Stems numerous, prostrate, four to seven inches long, scarce perceptibly downy. *Stipulæ* in pairs, oval-spear-shaped, taper-pointed, scored, smooth. *Leaf-stalks* furrowed above. *Leaves* alternate. *Leafits* nearly sessile, obtusely oval, or oblong-wedge-shaped, smooth on both sides, strongly ribbed, the ribs terminating in pointed serratures, scarcely distinguishable by the naked eye, in the youngest leaves only the mid-rib lengthened into a projecting point. *Heads* terminal, with a pair of stipulæ similar to, but broader than, those beneath. *Calyx* smooth, shorter than the blossom; teeth expanding, triangular, pointed but not rigid at the end. *Blossom* pale red. *Standard* spear-shaped, somewhat keeled. *Wings* and *keel* equal. Woodw.

Smooth round-headed Trefoil. Sandy meadows, pastures, and moist heaths. Saxmundham, Suffolk; Blackheath and Greenhithe, Kent. Ray. Isle of Sheppey. Hudson. About Norwich; Bath Hills, near Bungay. Mr. Woodward. Near Yarmouth. Mr. D. Turner. (Upon the sandy brow of Shorne Cliff; above the shore, Sandgate east, Kent. Mr. G. E. Smith. Sunderland Ballast Hills. Mr. Weighell. Rocks about Garn, near Denbigh. Mr. Griffith. E.) A. May—June.

T. sca'brum. Heads sessile, lateral, egg-shaped: segments of the calyx unequal, rigid, finally recurved: (stems procumbent. E.)

Curt.—(*E. Bot.* 903. E.)—*Barr.* 870—*Vaill.* 33. 1—*J. B.* ii. 378. 4—*H. Ox.* ii. 13. 10.

Whole *plant* harsh to the touch. *Stems* prostrate, four to seven inches long. *Stipulæ* oval-spear-shaped, terminated by an awn, scored with red lines. *Leaf-stalks* short. *Leaves* few. *Leafits* oblong-wedge-shaped, sessile. *Calyx* scored, hairy; teeth triangular, the lowermost long, expanding, sharp, and giving the plant its roughness. *Blossom* but little longer than the calyx, whitish. Woodw. It is in its seeding state that the segments of the calyx are most remarkably reflexed.

(HARD-KNOTTED or ROUGH (from the roughness of the heads, but not peculiarly appropriate, TREFOIL. E.) Chalky and sandy pastures. Chalk hills near the Thames between Northfleet and Gravesend. Dillenius. Bath Hills, near Bungay. Mr. Woodward. Caister Common, near Norwich. Mr. Crowe. Wick Cliffs, near Bath. Mr. Swayne. (Tide Mill Dam, Liverpool. Dr. Bostock. On Snettisham Beach, and in an old chalk pit near Wells, Norfolk. Mr. Crowe. Bishop Wearmouth Paddock. Mr. Weighell. Hill of Denbigh Castle. Mr. Dawson Turner. Bot. Guide. King's Park, Edinburgh. Dr. Greville. E.)
A. May—June.

T. STRIA'TUM. Heads sessile, mostly lateral, egg-shaped: (calyx furrowed, hairy; with straight, bristle-shaped teeth. E.)

(*Fl. Dan.* 1171—*E. Bot.* 1843. E.)—*Vaill.* 33. 2.

(*Plant* soft to the touch. E.) *Stems* from six to eighteen inches high, mostly upright, sometimes declining, but never prostrate. *Leaf-scales* in pairs, oval, pointed, scored, very downy. *Leaves* alternate, distant, the lower on long, the upper on short leaf-stalks, the uppermost sessile, or nearly so. *Leafits* of the lower leaves oblong-wedge-shaped, of the upper spear-shaped, sessile, downy on both sides, ribs not strongly marked, serratures barely distinguishable with a glass. *Heads* oval, woolly, sometimes on short fruit-stalks, some terminal, but mostly in pairs. *Calyx* just shorter than the blossom, scores almost hid by long soft hairs; teeth nearly equal, straight, awl-shaped, not stiff. *Blossom* pale red. *Standard* spear-shaped. *Wings* and *keel* equal. Woodw. The ribs upon the *calyx*, and its rounded nearly globular shape when ripe, readily distinguish this species.

SOFT-KNOTTED TREFOIL. (Welsh: *Meillionen rychog.* E.) Dry meadows and pastures. Bath Hill, Bungay. Mr. Woodward. Wick Cliffs. Mr. Swayne. (Hills near Sunderland; rocks at Holy Island. Winch Guide. On Beaumaris Green. Welsh Bot. King's Park, Edinburgh. Lightfoot. E.)
A. June.

T. ARVEN'SE. Spikes extremely villous, oval; teeth of the calyx bristle-shaped, equal, hairy, longer than the blossom.

Dicks. H. S.—*Curt.*—(*E. Bot.* 944. E.)—*Dod.* 577. 1—*Lob. Obs.* 498. 4, *Ic. and* ii. 39. 1—*Ger. Em.* 1193. 3—*Park.* 1107. 6—*H. Ox.* ii. 13. 8—*Fl. Dan.* 724—*Riv. Tetr.* 15, *Lagopus*—*Ger.* 1023. 2. *Barr.* 901 *and* 902—*Matth.* 983—*Fuchs.* 494—*Trag.* 595—*Lonic.* i. 106. 5—*Blackw.* 450.

Whole *plant* villous. *Stem* upright, (six to twelve inches high, E.) cylindrical, firm, much branched. *Stipulæ* in pairs, spear-shaped, scored with red veins, and ending in an awn. *Leaf-stalks* very short. *Leafits* of the lower leaves elliptical, of the upper nearly strap-shaped, somewhat notched at the end, the mid-rib lengthened into a short point. *Calyx* reddish, longer than the blossom, scored; teeth bristle-shaped, nearly equal, fringed with long hairs. Woodw. (*Blossoms* pale red, minute. *Spikes* sometimes long and cylindrical, (whence its trivial name. E.) *Calyx teeth* pinky; the hairs when much magnified appear rough and knotty. E.)

Rev. S. Dickenson observes that it is highly aromatic when dried, and that it long retains its odour.

HARE'S-FOOT TREFOIL. (Welsh: *Troed yr ysgyfarnog*. E.) Sandy pastures and corn-fields. A. July—Aug.

Var. 2. *Dwarf*. *Ray*. 14. 2. (Densely silky. Sm. E.)

Root running deep. *Stems* trailing, one to three inches long. *Fruit-stalks* very short. *Heads* numerous, roundish. *Blossoms* white or pale flesh-coloured. Dill. in R. Syn.

Sea coast. Brackelsham, Sussex. Yarmouth Denes; Lowestoft, plentifully. Mr. Woodward. (Upon sand at New Romney, and near Sandwich. Mr. G. E. Smith. E.)

T. ME'DIUM. Spikes loose; blossom nearly regular; stipulæ awl-shaped, converging; stems zigzag, branched. Afzel.

(*Hort. Gram.* E.)—*Jacq. Austr.* 386—*E. Bot.* 190—*Fl. Dan.* 662. (1273. Sm. E.)

Differs from *T. pratense* as follows: *Leaves* longer, more strongly ribbed, smooth above. *Stipulæ* spear-shaped, green, not awned. Haller. *Leaves* longer and narrower, and *blossoms* of a deeper colour than those of the cultivated *Clover*. Ray. (Heads of flowers larger. Hook. Vid. Afzelius. Linn. Tr. i. E.)

ZIGZAG TREFOIL. (MARL CLOVER or COW-GRASS, of Sinclair. Welsh: *Meillionen wyrgam*. E.) *T. medium*. Linn. *T. alpestre*. Huds. Lightf. Relh. *T. flexuosum*. Jacq. With. Ed. ii. Elevated pastures and sides of hedges. At the foot of the Highland mountains in moist and shady places. Lightfoot. (Road sides about Libberton, near Edinburgh. Dr. Greville. E.) In Skirrith and other mountainous woods and pastures in the North, plentifully. Curtis. High pastures, usually among bushes, and in woods and ditch banks. Bath Hills, near Bungay. Mr. Woodward. Plentifully in Shortwood, near Pucklechurch. Rev. G. Swayne. (In the Old Park near Beaumaris. Welsh Bot. Oversley Hill, and Bilsley Field, Warwickshire. Purton. Upon the boggy tract below the road behind Beachboro', towards Lyminge, Kent. Mr. G. E. Smith. E.) P. July.*

T. PRATEN'SE. Spikes crowded; blossoms unequal: calyx with four of the teeth equal; stipulæ awned; stems ascending. Afzel.

(*E. Bot.* 1770. E.)—*Fuchs.* 817—*Trag.* 586—*J. B.* ii. 374—*Ger.* 1017. 1—*Matth.* 835—*Riv. Tetr.* 11. 1, *Trifolium*—*Blackw.* 20—*Kniph.* 1—*Lonic.* i. 104. 4.

Flowers upright, when out of blossom hanging down. *Leafits* of the lower leaves roundish, those of the upper oval, slightly downy, dark blackish green, with a whitish, angular mark in the centre. *Stipulæ*, the upper oval, terminated by an awn, scored with red veins, slightly woolly. *Head* single, usually roundish, situate between a pair of nearly sessile leaves, and in part surrounded by their *stipulæ*, smaller, and of a deeper purple than those of *T. medium*. *Calyx* short, slightly woolly, generally scored with red veins; teeth bristle-shaped, woolly, usually tinged with purple. *Blossom* reddish purple, sometimes white; of one petal; tube long; standard longer than the wings and keel, blunt, notched at the end; wings blunt. St. *Stems* always bowed upwards at the base. *Branches* and leaves upright, not wide apart. *Calyx* lower tooth far shorter than the tube of the blossom. Afzel.

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* The true Marl Grass of the shops is the native *T. pratense*. Marl Grass was first cultivated by a farmer Smith, (I believe) of Somersetshire. See Billingsley's Agricultural Report for Somerset.) A circumstance which particularly distinguishes *T. medium*, is its propagating itself by root. Mr. Swayne. (Calculated from its creeping roots to last longer in the ground than *T. pratense*, but it is not yet cultivated. It does not possess the dangerous quality of causing cattle to be *hove* or *blown*, by eating it when fresh and green. Salisbury.—By actual experiment Mr. Sinclair proves the produce and nutritive qualities of this species to be decidedly inferior to the Broad-leaved Clover, *T. pratense*, but adds, that "though unfit for alternate husbandry, for permanent pasture on light soils its value is undoubtedly considerable. Hares and rabbits are very fond of this Clover, selecting it from other kinds. Hort. Gram. E.)

PURPLE TREFOIL. RED CLOVER. MARL GRASS. HONEYSUCKLE TREFOIL. (Welsh: *Meillionen gôch.* E.) Meadows and pastures.
P. B. May—Sept.*

Var. 2. *Smaller.* Leaves inversely heart-shaped, the upper generally opposite. Spike bare. Ray.

Ray 13. 1.

English Botanists have considered this as a smaller var. of *T. pratense*, the *stipulæ* being awned and the teeth of the calyx nearly equal, as in that species; but it differs in other respects very materially, the *leaves* being opposite, the *leafits* small, short, inversely heart-shaped, the *fruit-stalk* very long and destitute of floral-leaves. Afzel. Linn. Tr. i. 227.

Between Peckham and Camberwell. Hudson.

Var. 3. *Cultivated.* Larger and more upright than var. 1. Leaves somewhat paler and thinner. Flowers somewhat paler. Does not propagate itself by seed, or continue so long in the ground. Ray.

Fl. Dan. 989.

Stems strong, almost smooth, furrowed, twice as tall as those of var. 1. *Heads* large, oval, hairy. *Petals* more expanding, and *styles* shorter than those of var. 1. Mill.

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* The heads are used in Sweden to dye woollen green. With alum they give a light, with copperas a dark green. (This is one of the oldest and most useful plants in cultivation, yielding an abundant and nutritive crop; but it soon exhausts the ground. Mr. Salisbury remarks that the seeds of Clover have the property of remaining long in the ground after it has appeared to be exhausted, when ashes laid on will by their stimulating effects, cause the seeds to vegetate. Hence some persons have affirmed that (soap) ashes, when scattered over land, will produce Clover, (vid. *T. repens.*) Though

"Nature should provide
Green grass and fatt'ning *Clover* for their food,"

Cattle should be turned into heavy crops of Clover at first very cautiously, or it may soon prove fatal, especially if wet with dew or rain. When intended for immediate use, it should be mown in the middle of the day. Clover seeds of all kinds are necessary ingredients in laying down pasture lands.—Bees extract much honey from the sweet scented blossoms. The young plants are often injured by the same little jumping beetles, *Haltica*, that attack turnips. See Obs. on the Clover Weevil in Linn. Tr. vol. vi. A small weevil, also *Apion flavifemoratum*, feeds upon the seed of Purple Clover, and in most seasons does the crop considerable damage.° But this mischief is moderated by the penetrating *Ichneumon*, from whose research the insect, concealed even within the legume of the plant, is not secure. Indeed, so wisely and mercifully is the balance adjusted throughout the whole economy of nature, that, though the impending evil be calculated to excite serious apprehension, we may rest assured that He who rides on the tempest and directs the storm, also works by means imperceptibly minute for the general welfare of created being. E.)

Broad-leaved Clover. Meadows and pastures.*

Var. 4. Flowers cream-coloured: in other respects exactly resembling *T. pratense.*

A single specimen, found by the Rev. Mr. Swayne, in a field belonging to Tracy Park, near Bath. (Two solitary plants observed in a field of purple, near Uxbridge, by Mr. W. Christy. E.)

This plant has not the general hairiness, the long horns of the stipulæ, or the very long tooth of the calyx, so striking in *T. ochroleucum.*

(Var. 5. *T. pratense perenne. Perennial Red Clover* of Sinclair.

Hort. Gram.

Root slightly creeping, extremely fibrous. Of a darker green than the common Broad-leaved Clover, with more hairs on the *stem* and *leaves,* and less upright. The *sheaths* are terminated with narrower and longer points, which are set with longer hairs. *Flower-stalks* longer and more slender, with a disposition to grow flexuose. *Heads* of flowers less crowded, though equally large. When young the flower-head is extremely pubescent.

In the fertile grazing lands between Wainfleet and Skegness, in Lincolnshire, this true Perennial Red Clover abounds.†

T. OCHROLEU'CUM. Spikes villous, terminal: stem upright, pubescent: lower leafits inversely heart-shaped: lower tooth of the calyx as long as the tube of the blossom.

Dicks. H. S.—Curt.—(*E. Bot.* 1224. E.)—*Jacq. Austr.* 40.

Stem more hairy, and *stipulæ* sheathing to a greater extent, and running out into longer awns than in *T. pratense.* Gouan. *Leaves* alternate; *leafits* sessile, the lower ones heart-shaped and egg-shaped in the same plant. Woodw. These circumstances, together with the great length of the lower tooth of the calyx, sufficiently distinguish it from the yellow-flowered var. of *T. pratense.* (*Bloss.* sulphur coloured, in roundish, dense, heads. *Stems* twelve to eighteen inches high. E.)

Ray's *Trifolium pratense hirsutum majus, flore albo-sulphureo,* Syn. 328, belongs to this species, as Hudson determined, and not to the variety above-mentioned.

SULPHUR-COLOURED TREFOIL. (*T. squarrosum,* as well as *ochroleucum.* Linn. fid. Sm. E.) Dry meadows, pastures, and thickets, in a chalky soil in Essex, Cambridgeshire, Bedfordshire, Hertfordshire, Dupper's Hill, Croydon, and near Stamford. Bath Hills, near Bungay. Mr. Woodward. (Sunderland Ballast Hills. Mr. Weighell, Clapham, Bedfordshire. Rev. Dr. Abbot. E.) B. June—July.‡

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* Much cultivated. It is either grazed, or made into hay. Swine, goats, horses, and cows are fond of it. Linn. It seldom remains in the ground more than two years. Mr. Woodward.

† (It should be combined with other grasses, and is either suitable to the alternate husbandry, (for which *T. medium* is inadmissible on account of its creeping roots), or for permanent pasture, for which it is peculiarly adapted. Such are its advantages for clayey and peaty soils: in dry light land *T. medium* is preferable. Hort. Gram. E.)

‡ (Smith pronounces the herbage to be very "sparing and not lasting;" and suspects the plant may prove merely annual. *Apion assimile* is found upon it. E.)

(T. STELLA'TUM. Spikes hairy, egg-shaped: stipulæ elliptical: calyx-teeth spreading, leafy, equal, taper-pointed: stems spreading: leafits inversely heart-shaped, toothed. E. Bot.

Hook. Fl. Lond. 95—*E. Bot.* 1545—*Barr.* 860.

Herb varying much in luxuriance, always considerably hairy. *Stems* spreading, branched, clothed with soft horizontal hairs. *Leafits* strongly ribbed. *Flowers* in round or ovate heads. *Calyx* very hairy, furrowed; its orifice is surrounded with an elegant red and white circle when about half grown. *Standard* of the blossom red; the other petals pale red or white. E. Bot. (In nothing so remarkable as in the enlarged spread segments of the *calyx*, of a rich brown colour when the seeds are ripe. Fl. Lond. E.)

STARRY-HEADED TREFOIL. *T. stellatum.* Linn. Discovered by Mr. Borrer in July, 1804, growing in great plenty between Shoreham harbour, Sussex, and the sea, (but on the Ballast Hills, and no where else in Britain. E.) A. July. E.)

T. MARIT'IMUM. Spikes hairy, globular: stipulæ spear-shaped, upright: calyx teeth spreading and dilated after flowering: leafits inversely egg-spear-shaped: upper leaves opposite.

Dicks. H. S.—(*Hook. Fl. Lond.* 57. E.)—*E. Bot.* 220—*H. Ox.* ii. 14, *upper left hand figure*—*Pluk.* 113. 4.

(*Stems* numerous, spreading, often decumbent, about a foot long, branched, cylindrical, scored, slightly hairy. *Bloss.* pale red. One of those Trefoils distinguished by the teeth of the *calyx* becoming remarkably leafy, and much dilated, as the flower fades, and the seed ripens. In this it agrees with *T. stellatum*, but differs from *pratense* and its allies, as well as from *arvense*, whose teeth, though permanent and rigid, do not become leafy or dilated. Sm. E.)

TEASEL-HEADED TREFOIL. *T. maritimum.* Huds. Ed. 1. Sm. *T. stellatum.* Huds. Ed. ii. and With. Ed. ii. but not of Linn. Common on the southern sea coast. Dartford Saltmarsh. Richardson, in R. Syn. Leigh and Little Holland, Essex; in Somersetshire. Ray. Tilbury Fort. Petiver. Sheerness. Doody. In the meadows by the river side between the Hot-wells and Bristol. Mr. Swayne. Norfolk. Mr. Pitchford. (Willington Ballast Hills, Durham. Mr. Winch. Sunderland Ballast Hills. Mr. Weighell. E.) A. June—July.

(4) BLADDER TREFOILS. *Calyx inflated and gibbous.*

T. FRAGIF'ERUM. Heads roundish: calyx of the fruit reflexed: upper lip bi-dentate, inflated: stems creeping.

Dicks. H. S.—*Curt.*—(*E. Bot.* 1050. E.)—*Fl. Dan.* 1042—*Vaill.* 22. 2—*J. B.* ii. 379. 3. *b.*—*H. Ox.* ii. 13. 14—*Clus. Cur.* 39—*Ger. Em.* 1208—*Park.* 1109. 5.

Blossom purple. *Stipulæ* in pairs, oval-spear-shaped, drawn out into a long point, smooth. *Leafits* heart or egg-shaped, smooth, very slightly serrated. *Fruit-stalks* naked, longer than the leaf-stalks. Woodw. (The habit of *T. repens.* *Legume* at the bottom of the calyx, two-seeded. Fl. Brit. E.) (*Root* producing granulations. *Heads of flowers* small. *Calyx* ultimately becoming coloured, and aiding the general resemblance to a strawberry. E.)

Strawberry-headed Trefoil. (Welsh: *Meillionen fefusaidd.* E.) Moist meadows. About London, frequent. Moist places near the sea in the county of Durham. Mr. Robson. (In Darnley Vale: upon the undercliff, Sandgate east, Kent. Mr. G. E. Smith. North Shore, Liverpool. Dr. Bostock. About Holyhead. Welsh Bot. Leith Links. Mr. J. T. Mackay. Hook. Scot. E.) P. July—Aug.*

(5) (Hop Trefoils. *Standard of the blossom incurved, permanent.*

T. procum'bens. (Heads oval, imbricated: standard deflexed, permanent, furrowed: stems procumbent: leafits obovate. E. Bot.

E. Bot. 945. E.)—*Curt.* 161; *T. agrarium*—*Vaill.* 22. 3—*Riv. Tetr.* 10. 1, *T. lupulinum*—*Fl. Dan.* 796—*Walc.*—*J. B.* ii. 381. 1—*H. Ox.* ii. 13. 1 *and* 2, *the uppermost of the* 2 *figures.*

(*Stems* leafy, hairy, from four to ten or twelve inches long, cylindrical below, angular when they turn upwards. *Leafits* notched, toothed, veiny, smooth, a little glaucous. *Common foot-stalks* always longer than the partial stalk of the central leaflet. *Stipulæ* ribbed, often fringed. *Flowers* about fifty, bright yellow; standard finally deflexed, dry and membranous, sheltering the single-seeded, small, pointed, solitary *legume*. Sm.

T. procumbens of Huds. Lightf. Curt., &c. is considered by Linnæus only a variety of *T. filiforme*. Afzel. the *T. minus* of Relh. Sm. E.)

Hop Trefoil. (Yellow Suckling. Salisb. Welsh: *Meillionen hoppysaidd. T. procumbens.* Linn. Willd. Sm. Hook. Grev. *T. agrarium.* Huds. Lightf. Curt. E.) Dry meadows and pastures. A. June—July.†

T. filifor'me. Spikes oval, loosely tiled, few-flowered: stems trailing.

(*E. Bot.* 1257. E.)—*Ray* 14. 4.

Stems three to six inches long. *Stipulæ* in pairs, oval-spear-shaped. *Leaf-stalks* very short. *Leafits* mostly heart-wedge shaped, very entire at the base, serrated upwards, strongly veined, smooth, nearly sessile. *Fruit-stalks* from the bosom of the leaves smooth. *Flowers* when wild mostly three, seldom more than five. *Pedicles* extremely slender, from half to one line long. *Floral-leaves* awl-shaped, very minute, one at the base of the pedicle of the middle flower, none on the others. *Calyx* half as long as the blossom, with five scores; the two upper teeth shortest, the lower longer, the lowermost the longest. *Blossom* pale yellow; *standard* egg-shaped, somewhat notched, keeled. Woodw. (*Seed* one, rarely two. E.)

Slender Yellow Trefoil. (Welsh: *Meillionen felen eiddil.* E.) Poor sandy heaths and pastures. A. May—July.

Var. 2. *Lesser Yellow Trefoil.* (*T. filiforme* β. Fl. Brit. Hull. *T. procumbens.* Huds. Lightf. Curt. ? *T. dubium.* Smith. *T. minus.* Relh. Sm. Hook. E.) Spikes from eight to twenty-flowered.

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* (This Trefoil is eaten by cattle, but is not recommended for culture, its produce being late and inconsiderable. E Bot. E.)

† (According to Mr. Salisbury this is a very useful plant, seeding freely, growing readily, and affording a fine bite for sheep and cattle. But its being an annual must diminish its value to the agriculturist. E.)

Cart. 307; *T. procumbens*—(*E. Bot.* 1256. E.)—*Ray.* 14. 3, *at p.* 332—*H. Ox.* ii. 13. 1 *and* 2. *b, the lowermost of the 2 figures*—*Lob. Obs.* 468. 1, *and Ic.* ii. 29. 2—*Ger. Em.* 1186. 6—*Park.* 1111. 5.

Stems numerous, six to twelve inches long, much branched. *Stipulæ* in pairs, obtusely oval-spear-shaped. *Leaf-stalks* short. *Leafits* heart-wedge or egg-shaped, very entire towards the base, serrated upwards, the odd one on a short leaf-stalk, the side one nearly sessile, smooth. *Fruit-stalks* from the bosom of the leaves, longer than the leaf-stalks, slightly downy. *Pedicles* very short. *Floral-leaves* none. *Flowers* after flowering bent back, hanging loosely and separate. Woodw. *Stem* a little hairy. *Leafits* inversely heart-shaped, mid-rib a little hairy underneath, with about seven semi-transparent lateral ribs. *Flowers* yellow; loosely tiled. This is the most common sort of *Hop Trefoil*, and may be found in almost every dry, sandy, or gravelly pasture, especially where the turf is fine, but varying greatly in size according to the richness or poverty of the soil, and flowering from May to August. On considering that the above described plants frequently grow intermixed, are very similar in general habit, and subject to considerable variation in size, we hesitate to admit the latter as a distinct species. On this point the acute Greville observes, "I cannot find sufficient difference between *T. filiforme* and *minus*, to make them even varieties. The middle leafit is both sessile and petiolate on the same specimen in both plants, and is so represented in E. Bot. 1257 as *T. filiforme.* The teeth of the calyx, said by Sir J. E. Smith to be glabrous in the same plant, are figured in E. Bot. slightly hairy in both. The peduncles are pubescent in each; as to the latter being somewhat flexuose or straight, and the heads few or many-flowered, no importance can surely be placed on such characters." Fl. Edin. p. 162. E.)

T. SUFFOCA'TUM. Without stem or stalk: flowers nearly sessile on the root: (seed-vessel inhumed, two-seeded. E.)

(*E. Bot.* 1049. E.)—*Jacq. Hort.* 60.

Flowers in clusters, sessile, axillary, buried in the earth. *Calyx* oblong, compressed, smooth, five-cleft, segment reflexed. *Blossom* within the tube of the calyx, colourless, (pale pink, according to Sm. transient. E.) *Leaves* ternate, inversely egg-shaped, smooth, somewhat toothed. Linn. Every part of the plant, except the leaves, is buried in the sand, (so that even its seeds are actually perfected subterraneously, and without light: E.) but on putting down a knife or a stick the whole plant may be raised, and then its flowers and fruit come into view. The clusters in some of the older plants are as large as a small nut. Woodw.

(SUFFOCATED TREFOIL. Welsh: *Meillionen fygiedig.* E.) Discovered in England by Mr. Lilly Wigg, on the driest sandy part of Yarmouth Denes, near the sea; (and also found at Lowestoft, Suffolk, and other places on the eastern coast by Mr. Woodward. Plentiful on the Den at Teignmouth. Rev. Dr. Beeke, in Bot. Guide. Near the boat-house, Sandgate; the warren, New Romney; and the common, at Lydd. Mr. G. E. Smith. On Beaumaris Green. Welsh Bot. E.) A. June—Sept.

LO'TUS.* *Calyx* tubular: *wings* converging longitudinally upwards: *legume* straight, (cylindrical, spongy within. E.)

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* (The origin of this name seems involved in mystery. According to Herodotus it is of Egyptian extraction, and may probably be derived from λῶ, to desire; as though valuable

L. CORNICULA'TUS. (Heads depressed, of few flowers: stems bent, pithy: legumes spreading, nearly cylindrical: claw of the standard obovate: filaments all dilated. Sm. E.)

(*Hort. Gram.*—*E. Bot.* 2090. E.)—*Fl. Dan.* 991—*Curt.* 107—*Kniph.* 7—*Ger.* 1022. 6—*J. B.* ii. 355—*Walc.*—*Dod.* 573. 2—*Lob. Obs.* 501. 2, *and Ic.* ii. 44. 1—*Ger. Em.* 1190. 5—*H. Ox.* ii. 18. 10—*Anderson, Astragalus glycyphyllus*—*Fuchs.* 527—*Trag.* 594—*Lonic.* i. 106. 3.

(*Stems* three to eight inches long, spreading, slightly branched, more or less clothed with appressed hairs. *Leaves* shortly petiolate; leafits obovate, pubescent, especially beneath. *Stipules* resembling the leaves. *Flowers* bright yellow, four or five in a depressed, pedunculate head; the peduncle long, erect. *Calyx* with five subulate teeth, hairy. Standard of the *corolla* streaked with red, often quite red before expansion. *Legumes* narrow, subcylindrical, purplish brown, near an inch long. Grev.

COMMON BIRD'S-FOOT CLOVER (or TREFOIL. *L. corniculatus.* Linn. *L. gibbus.* (from the gibbous vexillum.) Welsh Bot. (Gaelic: *Bàr-a'-mhilsein.* E.) Meadows, pastures, heaths, and road sides. P. June—Aug.*

(**L. MA'JOR.** Heads depressed, many-flowered: stems erect, tubular: legumes drooping, cylindrical: claw of the standard linear: shorter filaments not dilated. Sm.

E. Bot. 2091—*Riv. Tetr.* 76. 1, *Lotus*—*J. B.* ii. 356. 1.

Stems one to three feet high, erect, pubescent, chiefly above, quite hollow, branched. *Leaves* obovate, or roundish-obovate, much larger than in the preceding, but similar in other characters. *Stipules* resembling the leaves. *Flowers* six to twelve, bright yellow, the standard veined with red. *Calyx* with the teeth hairy and somewhat denticulate under a lens. *Legumes* spreading, narrow, cylindrical. Grev.

GREATER BIRD'S-FOOT TREFOIL. *L. major.* Scop. Sm. Purt. Sinc. Grev. *L. corniculatus.* var. Linn. With. Fl. Brit. Hook. *L. corniculati major species.* R. Syn. 334. *L. pilosus?* Welsh Bot. Meadows, pastures, moist bushy places, and hedges. P. June—Sept. E.)†

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or desirable; which it certainly must be accounted, whether the name be applied as here, or to the different genera so denominated in Egypt, or Assyria. E.)

* The flowers become greenish when dried: in which respect they resemble those of the plants which produce indigo. Cows, goats, and horses eat it. Sheep and swine are not fond of it. *Thrips Physapus* is found upon it, (also *Apion Loti.*—The minute gall-gnat, *Tipula Loti,* sometimes inhabits the blossom, and strangely metamorphoses its appearance. It is likewise a favourite food of the caterpillar of the white butterfly, *Leucophasia Sinapis.* E.)—In Hertfordshire it is cultivated as pasturage for sheep. With.—It is strongly recommended by Anderson, (both for fodder and hay though under the erroneous name of *Milk Vetch.* E.)—There is no doubt but it might be cultivated to advantage. In moist meadows it grows much higher than any of the *Trefoils* or *Medicago lupulina,* and makes extremely good hay. Mr. Woodward. (The Bird's-foot Trefoils contain more bitter extractive and saline matters than either the grasses or clovers: in pastures and meadows, therefore, where clovers happen to be in small quantities, a portion of *L. corniculatus* would doubtless be of advantage, but it requires intermixture with other plants, especially in irrigated meadows. Hort. Gram. It is said to be particularly well adapted to poor soil, though after once being eaten off, its growth is not rapid. E.)

† (Mr. Sinclair states that he has raised this plant from seed on two different soils, the above characters remaining permanent; and expresses his surprise that two plants so distinct in habits should have so long been considered varieties only. "What renders a

(Several varieties of one or other of the above species have been recorded, as more or less attenuated, smooth, hairy, or hoary. R. Syn. 334. Hall. 385. E.)

(L. **decum'bens.** Heads of few flowers: stems recumbent, nearly solid: legumes somewhat spreading, cylindrical, two-edged: calyx hairy, its teeth shorter than the tube.

Stems widely spreading, partly quite prostrate, a foot or more in length, filled with light pith, angular, leafy, smooth, somewhat glaucous. *Leaves* glaucous, smooth above; occasionally clothed beneath with short, close, bristly hairs. *Leaflets* and *stipules* similar, lanceolate, pointed, oblique, except the terminal one, which is obovate-lanceolate. *Common foot-stalk* but half the length of the leaflets, channelled, slightly bordered. *Flower-stalks* axillary, four or five times the length of the leaves, smooth, stout and firm, obscurely angular, each bearing an umbel of from three to six bright yellow *flowers*, accompanied by a terminate leaf without stipulas. In starved plants the *flowers* are solitary. *Partial stalks* and *calyx* all over silky, with more or less abundant, short, close hairs; the *calyx-teeth* lanceolate, tapering, spreading, shorter than the tube, somewhat hairy, with wide rounded interstices. Separate portion of each *filament* of considerable length, the longest dilated upwards. *Legumes* nearly erect, or but slightly spreading, smooth, dotted, cylindrical, without any depression or channel, both sutures rather prominent, forming a ridge along each margin.

Hitherto confounded with *L. corniculatus*, or the following.

Spreading Bird's-foot Trefoil. *L. decumbens.* Forst. At Hastings, near Bulverhithe; also in meadows near Tunbridge. Forster. In fields near Forfar, North Britain. Mr. G. Don. P. July. Sm. Eng. Fl. E.)

(L. **angustis'simus.** Peduncle one or two-flowered: stem much branched, prostrate, tubular: legumes two-edged, very slender, somewhat compressed: calyx loosely hairy: teeth fringed, twice the length of the tube.

E. Bot. 925.—*J. B.* ii. 356—*H. Ox.* ii. 18. 1.

Pubescence consisting of fine, long, loose and spreading hairs, like those of *L. major*, but far more constant and abundant. *Root* beset with small tubercles, certainly annual. *Stems* partly ascending, densely leafy, very hairy, six to ten inches long, with a small internal cavity destitute of pith. *Leaflets* and *stipules* ovate, pointed, rather glaucous, hairy on both sides. *Flower-stalks* spreading, weak and slender, once or twice as long as the leaves, hairy, each bearing for the most part two, rather small, bright yellow flowers, sometimes but one, very rarely three, with a ternate leaf at the base of their *partial stalks*. *Cal.* widely funnel-shaped;

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specific distinction of most importance to the farmer, is the difference which exists between them in an agricultural point of view. The weight of green food, or hay, produced by *L. major* is triple that of *L. corniculatus*, and its nutritive powers are little inferior, but it is extremely bitter. It does not appear to be eaten by any cattle when in a green state; but when made into hay with common grasses, sheep, oxen, and deer eat it without reluctance. In moist clayey soils it would doubtless be a most profitable substitute for red clover, but the excess of bitter extractive and saline matters it contains seems to forbid its adoption without a considerable admixture of other plants." Hort. Gram. E.)

its teeth linear, narrow, green, twice as long as the tube, copiously fringed with long spreading hairs, totally unlike the calyx of *L. decumbens*. *Filaments* all rather dilated upward. *Legumes* spreading, with prominent sutures, smooth, of a shining brown, very slender, often transversely undulated, from the projection of their numerous orbicular seeds.

SLENDER BIRD'S-FOOT TREFOIL. *L. angustissimus.* Linn. *L. diffusus.* Soland. in Herb. Banks. Fl. Brit. With. Ed. 6. *L. pentaphyllos minor hirsutus, siliqua angustissima.* Bauh. Pin. 332. *T. corniculatum minus pilosum.* Bauh. Prod. 144. At Kingsteignton and Bishopsteignton, Devon. Rev. Dr. Beeke. Fl. Brit. In low meadows a mile beyond the Hot Wells near Bristol. Sir T. G. Cullum. Sands near Penzance. Mr. W. Allen. Bot. Guide. Among the rocks near Hastings castle. Mr. Dickson. A. May—June. Sm. Eng. Fl. E.)

MEDICA'GO.* *Pistil* bent, pressing down the keel: *S. Vess.* a legume, compressed, spiral.

M. SATI'VA. Flowers in upright bunches: legumes narrow, regular, spiral: stem upright, smooth.

Kniph. 8—(*E. Bot.* 1749. E.)—*Clus.* ii. 242. 2—*Lob. Obs.* 498. 1, *and Ic.* ii. 36. 2—*Ger. Em.* 1189. 2—*Park.* 1114. 1—*H. Ox.* ii. 16, *row* 1, 2, *and* ii. 15, *row* 3. II.—*J. B.* ii. 378. 1.

Stems striated, declining. *Branches* alternate. *Stipulæ* spear-shaped, ending in an awn. *Leaf-stalks* short. *Leafits* three together, elliptical, entire at the base, serrated upwards, the mid-rib lengthened into a thorn-like point, slightly downy above, smooth, and scored with veins underneath, on leaf-stalks, that of the terminal one the longest. *Fruit-stalks* from the bosom of the leaves, longer than the leaves. *Bunches* thick. *Pedicles* short. *Floral-leaves* awl-shaped, one at the base of each pedicle. *Calyx* nearly smooth; teeth awl-shaped, nearly equal. *Blossom* purple. *Legume* twisted spirally with two or three distant turns. Woodw. (*Root* rather woody. *Stems* two or three feet high. E.)

LUCERNE. PURPLE MEDICK. (Welsh: *Maglys rhuddlas.* E.) Meadows, pastures, and ditch banks, supposed to be not strictly indigenous. P. June—July.†

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* (So called by Tournefort from *Medica*, the more proper name of the plant, (μηδικη of Dioscorides), it having been originally introduced into Greece by the Medes, in the time of Darius Hydaspes. E.)

† Modern writers upon husbandry strongly recommend the cultivation of this plant for the purpose of feeding cattle, but it is not yet generally adopted, though in the neighbourhood of London its merits seem to be well understood. It requires a deep rich soil, and, in such, will continue to flourish many years, if kept free from weeds. One pound of Lucerne seed contains about 150,000 seeds, so that, supposing only one seed in three to vegetate and to survive accidents, one pound would produce 50,000 plants. (The seed does not ripen to perfection in this country, but is annually imported from France. Lucerne will yield a heavy crop of green food by the first of May, with three other cuttings during the summer, and is more valuable than either Clover or Vetches. It roots deep in the earth; and hence will continue a full crop when other grasses are burnt up in a dry season. Lucerne is three years in coming to full produce; but in the second year an acre will keep four horses, or two horses and two cows, all the summer.—Millar adduces various interesting facts relative to its utility, and we have ascertained that half an acre of Lucerne, the rows eighteen inches asunder, and the plants nine inches apart, will support a pair of carriage-horses, (cut and brought to them in the stable), without corn or hay, in good

M. FALCA'TA. Flowers in upright bunches: legumes sickle-shaped: stem prostrate.

(*E. Bot.* 1016. E.)—*Fl. Dan.* 233—*Kniph.* 11—*Riv. Tetr.* 84—*Falcata;*—*H. Ox.* ii. 16, *row* 1. 1, *and* ii. 15, *row* 3. 1—*Clus.* ii. 243. 1—*Ger. Em.* 1191. 8—*Park.* 1114. 3—*J. B.* ii. 383. 2.

(*Root* long and woody. *Habit* like the preceding. *Stems* hairy. *Leaves* and *stipulæ* same as *M. sativa; clusters* usually shorter and more dense, but variable. *Flowers* pale yellow or violet, frequently green, from a combination of these two colours. *Legumes* black, downy. *Seeds* from four to eight, kidney-shaped, yellowish. The pollen is conveyed to the stigma by the curved germen releasing itself with a spring from the closed keel of the flower. Sm. E.)

YELLOW SICKLE MEDICK. BUTTER-JAGGS. Balks of cornfields, and sandy pastures. Between Watford and Bushy-Hill. Ray. About Norwich, plentifully. Mr. Woodward; (and Bury. Sir J. E. Smith. Dunwich old Church Yard, profusely; and hedge side from Sudborn to Oxford. Rev. G. Crabbe. Willington Ballast Hills, Durham. Mr. Winch. Not unfrequent in Cambridgeshire, with purple flowers. Rev. R. Relhan. Near Port Eynon, Glamorganshire. Mr. E. Forster, jun. Fields at Bradwell and Burgh Castle, Suffolk; also on Yarmouth Denes. Mr. Wigg. Dumpton Gap, near Ramsgate, Smith's Obs. E.)
P. July.*

M. LUPULI'NA. Spikes oval, upright: seed-vessels kidney-shaped, rugged, with one cell and one seed: stems trailing.

(*E. Bot.* 971. E.)—*Fl. Dan.* 992—*Curt.* 120—*Kniph.* 11—*Riv. Tetr.* 8, *Melilotus minima*—*H. Ox.* ii. 15, *row* 4. *f.*—*Fuchs.* 819—*Trag.* 593—*J. B.* ii. 380. 4—*Dod.* 576. 2—*Ger. Em.* 1186. 5—*Park.* 1106. 6—*H. Ox.* ii. 16. 8—*Ger.* 1020. 2—*Lonic.* i. 106. 4.

Stems, six to 18 inches long, somewhat angular, unless supported by other plants; trailing. *Branches* very numerous, alternate. *Stipulæ* oval-spear-shaped, with a long awn. *Leaves* on very short leaf-stalks. *Leafits* three together, oblong-wedge-shaped, serrated upwards, notched at the end, with the mid-rib lengthened into a projecting point. *Head* oval. *Flowers* small, 30 or 40 together. *Calyx* slightly downy, nearly as long as the blossom; teeth awl-shaped, the two upper ones rather shorter. *Blossom* yellow. *Legume* turning black when ripe. Woodw.; sometimes quite smooth and hairless.

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working condition for twenty weeks, from June to October inclusive, and they prefer it to any other kind of food. It should be given cautiously at first, as it then proves a powerful diuretic; and too great abundance will in some horses occasion the staggers. Pigs devour it greedily, and cows fatten on it. Dr. Turner, who published a Herbal about the year 1550, is the earliest English author who relates the utility of this plant, and his information was chiefly derived from the Roman naturalists; though it has been conjectured that he first introduced the cultivation of Lucerne, or, as he calls it, *Horned Clover,* into England. E.)

* In hot, dry, barren, sandy places it is well worth the trouble of sowing for the purpose of hay, a practice long since adopted in some parts of Sweden. Cows, horses, goats, and sheep eat it. (It is supposed to produce as good fodder as Lucerne, though less available to the scythe. Vid. Experiments by Thos. Le Blanc, Esq. in Martyn's Mill. Dict. E.)

Trefoil Medick. Melilot Trefoil. (Black Nonsuch. Welsh: *Maglys gwineuddu.* E.) Corn-fields, meadows, and pasture.
A. (sometimes B. E.) May—Aug.*

Var. 2. Legumes about 10, slightly compressed, rough with numerous tubercles. Ray.

H. Ox. ii. 15. 4.

Medica polycarpos, fructu minore compresso scabro. R. Syn. 333. *Medica cochleata, &c.* H. Ox. ib. The rest of the synonyms in Fl. Angl. belong to var. 1. St.

Corn-fields near Peckham, Paddington, and behind Pindar's-end, near Enfield. Ray.

(**M. polymor'pha.** Legumes spiral: stipulæ toothed: stem spreading.

Curt.—*E. Bot.* 1616.

Root fibrous, bearing tubercles. *Stems* prostrate. *Leafits* toothed. *Stipulæ* in each variety more or less toothed. *Peduncles* axillary, with two or three flowers. *Blossoms* yellow. *Legumes* roundish, with many spirals, prickly, many-seeded. *Seeds* kidney-shaped, flatted, perfectly smooth. Fl. Brit. E.)

Snail-shell Medick. Heart Trefoil or Clover. Dry sandy pastures, especially on the sea-shore. A. May—June.†

(Var. 1. Leafits inversely heart-shaped, smooth, marked above with a blackish brown heart-shaped spot. Fruit with widely diverging thorns. Legumes flat at the base, narrowing towards the top; wreathes flat; prickles expanding, nearly straight. Blossom standard notched at the end, much larger than the other petals. E.)

Curt. 176—*Cam. Hort.* 27—*Ger.* 1021. 4—*Ger. Em.* 1190. 4—*Park.* 1115. 6—*H. Ox.* ii. 15, *row* 2. 12—*Mart. Fl. Rust. t.* 76.

Medicago polymorpha arabica. Linn. Huds. Relh. *M. arabica.* Curt. With. Ed. 3 and 4. Sym. Hull. *M. maculata.* Sibth. Sm. *M. polymorpha a.* Fl. Brit. Wells in Norfolk. Mr. Crowe. Meadows, near the Hot-wells, Bristol. Mr. Swayne. Sand-pits at Charlton, Kent. Hudson. West of Bridport, plentiful. (Stone quarry in the Pigwells, and near the gate of Godfrey's Lammas, Warwick. Perry. Maes y porth, Anglesey. *Welsh Bot.* E.)

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* Cows, horses, goats, and sheep eat it; but it is less grateful to them than the other species. Linn. It is cultivated in Norfolk under the name of *Nonsuch*, and is usually mixed with Rye-grass (*Lolium perenne*). The crop is then called black and white Nonsuch. Mr. Woodward. In the Isle of Wight I have seen it sown along with clover and Rye-grass. (It is best adapted to light, deep soils, and may be advantageously sown for sheep food in open fields, and helps the land by ploughing in previous to a wheat crop, a practice recommended in Young's Annals of Agriculture, and approved by Mr. Sinclair. But being an annual, the latter authority justly observes, it is only fit for the alternate husbandry; for to sow the seeds of this plant with others on land intended to remain for permanent pasture would be subversive of the intention; as every spot this plant occupied would be naked the second year; and these spots afford encouragement to the growth of weeds, and the decaying roots to grubs. The larvæ of the brown moth *Lasiocampa Medicaginis*, Curt. Brit. Entom. pl. 181. feed upon this plant, though not exclusively, others of the same tribe likewise suffering from their depredations. E.)

† (A plant much relished by cattle; but, being an annual, is probably not so valuable for cultivation as some other species. The different varieties are introduced into flower gardens on account of the curious shapes of the legumes, called *Snail's-horns*, *Caterpillars*, &c. Salisbury. E.)

(Var. 2. Leafits inversely egg-shaped, covered with white silky down. Prickles of the legumes stiffly hooked. Blossom small, pale yellow. E.)

H. Ox. ii. 15, *row* 2. 15—*J. B.* ii. 386. *b.*—*Riv. Tetr.* 88, *Cochleata, row* 4, *f.* 4, *Ech. Min.*—*J. B.* ii. 386. 2. *a.*—*Park.* 1115. 7. *a.*—*Fl. Dan.* 211.

(*Medicago polymorpha minima.* Linn. Oed. *M. echinata minima.* Ray. Bauh. *M. minima.* With. Ed. 3 and 4. Hull. Willd. Sm. *M. polymorpha β.* Fl. Brit. E.) Sandy places, especially on the sea coast, but rather rare. At Narborough, near Swaffham. Mr. Woodward. Chippenham gravel-pit. Rev. R. Relhan. (Between Sandwich and Pegwell, abundant. Mr. G. E. Smith. E.)

Var. 3. Leafits inversely egg-shaped, hairy; prickles of the fruit very short, depressed, not rigid.

Pluk. 113. 6—*H. Ox.* ii. 15. 11.

M. polymorpha muricata. Linn. *M. muricata.* With. Ed. 3 and 4. Hull. Willd. Sm. *M. muricata γ.* Fl. Brit. E.) At Orford in Suffolk, on the sea bank, plentifully. Ray.

(*M. polymorpha* appears to be a very valuable plant, according to local and other circumstances. The leaves may be more or less serrated, and the spots thereon sometimes scarcely observable.

Mr. G. E. Smith attracts attention to a plant of the above description, not unfrequently found from the foot of the chalk escarpment at Folkstone to New Romney and Rye. This plant is said to be distinguished by its beautifully reticulated legumes, small, pale yellow flowers, and pale green, smooth, herbage. Mr. S. conjectures it may prove to be *M. denticulata.* Willd. It is figured in Sm. Obs. pl. i. also in Mag. Nat. Hist. i. 398. In the former work will also be found some curious observations on the structure of the legumes of certain species of *Medicago.* E.)

CLASS XVIII.

POLYADELPHIA.

POLYANDRIA.

HYPER'ICUM. *Cal.* with five divisions, beneath: *Bloss.* five petals: *Styles* one, three, or five: *Capsule* three to five-celled.

POLYANDRIA.

HYPER'ICUM.* *Cal.* with five deep divisions: *Petals* five: *Filaments* numerous, united at the base into three or five sets: *Capsule* with three or five cells, and many seeds.

(1) *Styles three; Stems shrub-like.*

H. ANDROSÆ'MUM. Fruit like a berry: stem two-edged.

Curt. 265—(*E. Bot.* 1225. E.)—*Dod.* 78. 2—*Lob. Obs.* 357. 3, *and Ic.* i. 632. 1—*Ger. Em.* 543. 1—*Park.* 576. 1—*Blackw.* 94—*Ger.* 435—*H. Ox.* v. 6. 12.

(*Plant* about two feet high; aromatic when rubbed. *Root* woody. E.) *Leaves* opposite, sessile, smooth, entire, egg-shaped; at the base of the branches very large, those of the branches decreasing in size as they approach the summit, and nearly spear-shaped. *Calyx* segments unequal. *Berries* black when ripe. Woodw. *Flowers* terminal, an inch over, four together. *Fruit-stalks* cylindrical, smooth. *Calyx* the outer segments much larger. *Petals* yellow, concave, striated, unequal at the end from a hollow in the margin on one side.

TUTSAN. PARK-LEAVES. (Irish: *Beahnua Firion.* Welsh: *Creulys bendiged; Gwaed y gwyr.* E.) Woods and moist hedges. Woods at Wick Cliffs, near Bath. Rev. G. Swayne. Near Pengwarry, Cornwall, in ditches. Mr. Watt. Duke of Bridgewater's woods at Askeridge, and near Berkhamstead, Hertfordshire: (also at Field Dalling, Norfolk. Mr. Woodward. E.) Lanes at the foot of Malvern Hill, Worcestershire. Dr. Stokes. Rocky woods in Westmoreland, frequent. Mr. Gough. In a deep hollow way in a marly soil between Worcester and Tewkesbury.

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* (From υπερ, against; and εικων, an image or spirit; it being considered an amulet or preservative from evil spirits. E.)

(Toxteth Park, near Liverpool; Petigown, Isle of Mull. Dr. Bostock. Frequent in Norfolk, as at North Walsham, Costesy, and other places. Sir J. E. Smith. Woods at Loch Long, Scotland. Mr. Winch. Inverary. Lightfoot. About Critchel House, Henbury, and Grange in Purbeck. Pulteney. In Eastwear Bay, Kent. Mr. G. E. Smith. In stony, hollow lanes about Selborne, Hants. White's Nat. Hist. Cacan'r, Ychen, near Beaumaris. Welsh Bot. By the side of the great road near Cwm Delhi, at the foot of Snowdon, leading from Capel Cerig to Beddgelert, Carnarvonshire. Stream side below Ogwell mill, near Newton, Devon; together with *Aconitum Napellus:* also somewhat more than half way up a lane leading from Bitton Mill, near Teignmouth, to Haldon. E.)
P. July—Sept.*

(2) *Styles three; stems herbaceous.*

H. QUADRAN'GULUM. Leaves egg-shaped, with pellucid dots: stem quadrangular.

Curt. 231—(*E. Bot.* 370. E.)—*Fl. Dan.* 640—*Trag.* 73. 2—*Matth.* 937—*Dod.* 78. 1—*Lob. Obs.* 216, *and Ic.* 399. 1—*Ger. Em.* 542—*Park.* 575—*Ger.* 434—*H. Ox.* v. 6. 10—*Pet.* 60. 11.

Stem often reddish, one to two feet high, branched; edges membranous, marked with short dark-purple glandular streaks. *Leaves* crossing each other in pairs, sessile, oblong-egg-shaped, ribbed, dotted along the edges with black glands, particularly on the under side. *Calyx,* segments ribbed, rather expanding, a little toothed at the end. (*Flowers* only half the size of the last, forming a leafy, dense *panicle.* E.) *Petals* yellow, ribbed, concave, generally marked with dark-purple lines and dots, filled with a purple liquor, which stains paper permanently. *Anthers* with a small black gland. *Styles* yellow. *Summits* purple. (*Plant* yielding a lemon-like odour. Sm. E.)

SQUARE-STALKED ST. JOHN'S WORT. ST. PETER'S WORT. (Welsh: *Ewrinllys pedrongl.* E.) Moist hedges and shady places. Bogs in Cornwall. Mr. Watt. Wick Cliffs. Mr. Swayne. About Manchester. Mr. Caley. (Dickenson's Dingle, near Liverpool. Dr. Bostock. In Anglesey. Welsh Bot. Ditch by Blackford farm house. Mr. Neill. Grev. Edin. not unfrequent in Scotland. At Mottershall, near Stone, Staffordshire. E.) P. July—(Aug. E.)

H. PERFORA'TUM. Stem two-edged: leaves blunt, with pellucid dots.

Ludw. 11—*Curt.*—*E. Bot.* 295—*Mill. Ill.*—*Blackw.* 15—*Woodv. p.* 29—*Fl. Dan.* 1043—*Kniph.* 3—*Dod.* 76. 1—*Lob. Obs.* 216. 1, *and Ic.* i. 398. 1—

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* (Often admitted into gardens, and ornamental in front of shrubberies. Formerly esteemed for medicinal qualities, and therefore denominated Tutsan, *Taut-saine,* q. d. *All-heal;* but its real merits, if any, are little understood. The leaves, given in substance, were supposed to destroy worms. By distillation, they yield an essential oil. The dried plant boiled in water with alum dyes yarn of a yellow colour; and the Swedes give a fine purple tinge to their spirits with the flowers. Cows, goats, and sheep eat it; horses and swine refuse it. The Rev. Hugh Davies entertains no doubt that this plant has a claim to the Welsh name *Gwaed y gwyr,* (Androsæmum, Ανδρος αιμα, man's blood), prior to *Sambucus Ebulus,* because, if the yellow flowering tops are bruised between the fingers, they will immediately communicate a deep crimson stain. The *Ebulus* claims it on the strength of a fabulous tale, that the plant originally sprung from the blood of the Danes slain in Britain, whence also its English name Dane-wort. E.)

Ger. Em. 539. 1—*Park.* 573. 1—*Pet.* 60. 5—*Matth.* 936—*Ger.* 432. 1—*Fuchs.* 831—*Trag.* 72. 1—*H. Ox.* v. 6. 1.

(Whole *plant* quite free from hairs, more bushy and of a darker green than the preceding; much impregnated with an odorous essential oil which stains purple. *Stems* upright, two feet high, E.) nearly cylindrical, the edges running from the base of the leaves to the bottom of the knot below, beset above with small black dots. *Leaves* in cross pairs, oblong, rounded at the end, with seven, and sometimes five, semi-transparent lines, with several black dots near the edges on the underside; the semi-transparent dots numerous. *Fruit-stalks* from the bosom of the upper leaves. *Calyx,* segments spear-shaped, taper-pointed. (*Flowers* yellow, in dense terminal panicles. E.) *Petals* ribbed, set near the edges with dark purple glands, one of the sides very entire at the edge, the other serrated. *Stamens* 30 or more. *Anthers* with a globular black gland at the top between the lobes. *Germen* egg-shaped. *Styles* thread-shaped, yellow. *Summits* sometimes crimson.

COMMON PERFORATED ST. JOHN'S WORT. (Irish: *Allais Muire.* Welsh: *Eurinllys trydwll.* Gaelic: *Achlasan-Challum chille.* E.) Thickets, woods, hedges, dry banks. P. July—Aug.*

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* (This plant has long held a place in the Materia Medica, but its use is undetermined, notwithstanding such enconiums as the following by old authors. "Diureticum est et vulnerarium insigne." Ray. "Egregium est medicamentum in mania intus sumptum." Sala. Grembs. "Mihi quoque sæpius expertum: idem præstat et in melancholia." Needham. Dr. Swediaur recommends an infusion of the flowering heads in hæmoptysis, and worms. The anti-maniacal properties attributed to this herb by empirics, and the portentous appellation bestowed upon it of "*Fuga Dæmonum,*" appear to have rendered it obnoxious to various popular superstitions both at home and abroad. On the Eve of St. John the Baptist, the people of North Wales fix sprigs of it over their doors, and sometimes over their windows, in order to purify their houses, and by that means drive away fiends and evil spirits, in the same manner as the Druids were accustomed to do with Vervain. Bingley's Tour. In Germany, ceremonials are practised, (somewhat resembling those of Hallow E'en in Scotland), to prognosticate the good or bad fortune of young men and maidens in obtaining partners for life. On Midsummer night the young girls fasten sprigs of St. John's-wort against the walls of their chamber, and by the state of the sprig on the ensuing morning, anticipate whether or not their condition shall soon be changed; if fresh, no longer are they to remain in single blessedness; if withered, then must be prepared the willow garland, for so are they destined to droop and pine away.

"The young maid stole through the cottage door,
And blushed as she sought the *plant of power:*
"Thou silver glow-worm, O lend me thy light!
I must gather the mystic *St. John's Wort* to night,
The wonderful herb, whose leaf will decide
If the coming year shall see me a bride."
And the glow-worm came
With its silvery flame,
And sparkled and shone
Through the night of St. John,
And soon has the young maid her love-knot tied,
With noiseless tread,
To her chamber she sped,
Where the spectral moon her white beams shed:—
"Bloom here—bloom here, thou plant of power,
To deck the young bride in her bridal hour!"
But it drooped its head, that plant of power,
And died the mute death of the voiceless flower.
And a withered wreath on the ground it lay,
More meet for a burial than bridal day.

H. DU'BIUM. Stem imperfectly quadrangular: leaves blunt, without pellucid dots: calyx leaves elliptical.

E. Bot. 296.

Stems several, two or three feet high, upright; sprinkled with black dots. *Leaves* large, embracing the stem, egg-shaped, membranous at the edge, with black dots underneath. *Calyx* leafits very blunt, yellow green, marked with short black lines. *Petals* large, very entire, yellow, with black lines above and a few black spots underneath the edge, Leers; or sometimes, according to Mr. Bourne, with dusky purple streaks on the under surface. (Young radical *shoots* bright red. Sm. E.)

IMPERFORATE ST. JOHN'S WORT. (Welsh: *Eurinllys mawr.* E.) Discovered first as an English plant by Dr. John Seward of Worcester, growing plentifully about Sapey in that county. At Hafod, Cardiganshire, and in Mr. Knight's woods at Downton Castle, near Ludlow. Sir J. E. Smith. (North Mimms, Herts. Mr. Sabine. Fl. Brit. In a stone quarry at Hutton, near Ripon. Mr. Brunton. Near Whiston, by the road to Washington, Sussex. Mr. Borrer. Frankwell Bank, Shrewsbury. Dr. Evans. Plentiful about Penrice, Glamorganshire. Mr. Dillwyn. Near Downing, Flintshire, and on the brow to the west of Beaumaris mills. Rev. H. Davies. Banks of the Tees, near Middleton. Rev. J. Harriman. Bot. Guide. About Garn, near Denbigh. Mr. Griffith. Below Kirby Lonsdale Bridge. Mr. Winch. In a wood two miles from Lanark, on the Hamilton road. Hopkirk. E.) In Mr. Digby's plantation at Meriden, Warwickshire. P. July—Aug.

H. HUMIFU'SUM. Flowers axillary, solitary: stems two-edged, prostrate, thread-shaped: leaves smooth, elliptical.

Curt. 162—*Fl. Dan.* 141—(*E. Bot.* 1226. E.)—*Clus.* ii. 181. 3—*Dod.* 76. 2

And when a year had passed away,
All pale on her bier the young maid lay!
And the glow-worm came
With its silvery flame,
And sparkled and shone
Through the night of St. John,
As they closed the chill grave o'er the maid's cold clay."

In Spain, similar rites are observed on the like occasion, but accompanied by a yet more whimsical fancy; for the lovely damsels of the banks of Guadalquiver, chanting the following strain,

"Come forth, come forth, my maidens, and slumber not away,
The blessed, blessed morning, of St. John the Baptist's day,
There's trefoil on the meadow, and lilies on the lea,
And hawthorn blossoms on the bush, which you must pluck with me."

select their garland to adorn a "snow-white wether," from whose deportment, while an involuntary prisoner, the prognostics are deduced. Whether this plant, the renowned Vervain, or some other, were esteemed the most efficacious preservative from every ill accident by our ancestors, we know not, but certain it is that in more credulous ages implicit reliance was placed in such charms; and so important was their influence considered that it was usual in trial by combat, according to the law of arms, to exact an oath from both appellant and defendant, not merely that "the cause for which they were to fight was just and true;" but that "they had nothing to do with witchcraft or magic; nor carried about them *any herb*, or other kind of charm!" after which ceremonial, both having performed their devotions, they prepared themselves to fight, first with spears, then with swords, and last with their daggers. Inter alia, vid. Annesley v. Katrington, temp. Ed. III. E.)

Lob. Ic. i. 400. 1—*Ger. Em.* 541. 4—*Pet.* 60. 8—*Trag.* 72. 2—*J. B.* iii. 386. 1—*H. Ox.* v. 6. 3.

(*Plant* delicate, semi-transparent, pale green. *Stems* a span long, numerous, compressed, slender. *Leaves* oblong, smooth, set with glands near the edges, scored with semi-transparent lines. *Flowers* sometimes in pairs. *Floral-leaves* none. *Calyx* segments unequal, leafy and large, spear-shaped, terminated by a very small point, a little toothed at the edges, marked with dark purple spots and streaks. *Petals* yellow, with a tinge of red on the outside, set with a few blackish glands at the end. *Stamens* in three sets, five or six in each. *Anthers* without glands. *Summit* sometimes tinged with red. (*Caps.* red in ripening, a colour which the *leaves* assume in decay. Sm. E.)

Var. 2. Leaves ternate.

Trailing St. John's Wort. (Welsh: *Eurinllys mân ymdaenawl.* E.) Meadows, pastures, heaths, and woods. Ronck's Wood, near Worcester. Stokes. Stuston Common, near Diss, Norfolk, (and in Richmond Gardens. E.) Mr. Woodward. Malvern Common, Worcestershire. Mr. Ballard. Wick Cliffs, Somersetshire. Mr. Swayne. Manchester race-ground. Mr. Caley. (Pentland Hills. Maughan. About Roslin. Greville. Alcester Heath, Warwickshire: Astwood Common, Worcestershire. Purton. Road side between Warwick and Leamington. Perry. In Anglesey. Welsh Bot. By the green-house, in the pleasure grounds at Wick House, near Bristol. E.) P. July.

H. elo'des. Stem cylindrical, creeping, villous: leaves villous, roundish: panicle few-flowered.

Dicks. H. S.—*E. Bot.* 109—*Pet.* 60. 12.

Stems six to eight inches long, trailing and creeping, chiefly hairy on the upper surface. *Flowering branches* ascending, five to six inches high. *Leaves* sessile, frequently slightly notched at the end, with five ribs, and with dots only visible with a glass, and against a strong light. *Panicle* branched, leafless. *Floral-leaves* oval-spear-shaped, minute, reddish, edged with red glands, a pair beneath each division. *Calyx* reddish, about one-fourth as long as the blossom, deeply divided; segments oval, edged with minute red glands. *Blossom* reddish yellow, with green stripes, usually closed, (opening only in sunshine, E.) twisted spirally, sometimes merely folded up. Woodward. *Stem* three to eight inches long. *Petals* yellow, with eight greenish lines, and a small greenish gland on the inner side of the claw. (*Filaments* much less deeply subdivided than in our other species. *Caps.* ribbed. Sm. E.)

Marsh St. John's Wort. (Irish: *Beahnua Firionn.* Welsh: *Eurinllys y gors.* E.) Marshy places, 'in peaty spongy soil.' Boggy ground near Norwich. Mr. Woodward. Bog at Cosgarne, Cornwall. Mr. Watt. (Crosby, near Liverpool. Dr. Bostock. Near Gisborough, Yorkshire. Mr. Winch. Coleshill Bog and Pool. Purton. Shirley Common. Surry. Mr. W. Christy. Willesboro Leas, Kent. Mr. G. E. Smith. At Loch Ramsay, and along the valley to Brodie in Arran. Mr. Murray. Hook. Scot. E.) Bogs on Birmingham Heath, (now enclosed and drained. E.) •P. July—Aug.

H. monta'num. Calyx prominently serrated with glands: stem cylindrical, upright: leaves egg-shaped, smooth, (clasping the stem. E.)

(*E. Bot.* 371. E.)—*Fl. Dan.* 173—*Col. Ecphr.* 74. 1—*Trag.* 73. 3—*Pet.* 60. 7—*J. B.* iii. 383. 2—*H. Ox.* v. 6. 9—*Fuchs.* 74.

Stem two feet high, cylindrical; smooth. *Leaves* in pairs, (nearly two inches long, sessile, egg-shaped, the upper egg-spear-shaped, smooth, with seven ribs, and reticulated with veins, the edges set with black dots, the surface with pellucid ones. E.) *Flowers* in panicles. *Panicles* branched, terminal, or from the bosom of the upper-leaves. *Floral-leaves, fruit-stalks,* and *calyxes* beset with strong hairs, each terminated by a black gland. *Calyx* divided almost to the base; segments spear-shaped, pointed. Woodw. (*Bloss.* pale yellow. E.)

MOUNTAIN ST. JOHN'S WORT. (Welsh: *Eurinllys mynyddawl.* E.) Woods and thickets, in mountainous situations. Frequent in the west of England. Ray. Above Bwrdd Arthur, Anglesey. Rev. Hugh Davies. Syke's Wood, near Ingleton, Yorkshire. Curtis. Hedge-banks and sides of woods about Pershore and Bredon Hill, Worcestershire. Nash. Bath Hills, near Bungay. Mr. Woodward. Near Cartmell Well. Mr. Jackson. Many barren places in Furness Fells. Mr. Atkinson. (In the woods above Grange, in Purbeck; and in Langton Copse, near Blandford. Pulteney. In Ryhope, Dalton, and Castle Eden Dean, Durham. Mr. Winch. Woods about Garn, near Denbigh. Mr. Griffith. Blackstone rock, near Bewdley. Perry. E.) (P. July. E.)

H. HIRSU'TUM. Calyx lanceolate, serrated with glands: stem cylindrical, upright: leaves egg-shaped, somewhat downy.

Curt. 182—(*E. Bot.* 1156. E.)—*Kniph.* 8—*Pet.* 60. 10—*H. Ox.* v. 6. 11—*Fl. Dan.* 802—*Fuchs.* 76—*J. B.* iii. 382. 2.

The *flowers* close in the night; those of *H. perforatum* do not. Linn. *Stem* upright, (about two foot high, E.) nearly cylindrical, with short soft hairiness. *Leaves* in cross pairs, those of the stem egg-shaped, broader than those of *H. perforatum,* rough with short hair, with seven or nine ribs, and numerous semi-transparent dots; those of the branches spear-shaped. *Floral-leaves* with glandular serratures at the edges. *Calyx* segments spear-shaped, with about twelve glands on each. *Petals* yellow, entire, with six or eight ribs, and a few black glands at the end. *Stamens* about twenty-four. *Germen* egg-shaped. *Styles* thread-shaped, yellow. *Summits* crimson. (*Flowers* only half the size of those of *H. montanum.* Conjectured by Smith to be the *Ascyron* of the old herbalists, rather than *H. quadrangulum* as sometimes supposed. E.)

HAIRY ST. JOHN'S WORT. Thickets and hedges. Wick Cliffs, near Bath. Rev. G. Swayne. At the foot of Ingleborough, near to Hurtlepot, and other places in Craven, Yorkshire. Mr. Caley. (Beech Lane, near Painswick. Mr. O. Roberts. Collinton woods. Mr. Arnott. Burnt Island. Mr. Neill. Grev. Edin. E.) P. June—July.

H. PUL'CHRUM. Calyx ovate, serrated with glands: stem cylindrical: leaves embracing the stem, heart-shaped, smooth.

Curt.—*Fl. Dan.* 75—(*E. Bot.* 1227. E.)—*Walc.*—*Trag.* 74—*Pet.* 60. 6—*Lonic.* i. 130. 2—*J. B.* iii. 383. 1.

(A truly elegant plant, well meriting the trivial name bestowed on it by Tragus. E.) *Stem* upright, (12 to 18 inches high, E.) often red. *Leaves* in distant pairs, heart or obtusely egg-shaped, green above, sea-green beneath, with numerous semi-transparent dots. *Flowering-branches* from the bosom of the upper leaves, slender, with one or more flowers at the end, and one or two small leaves. *Floral-leaves* none. *Calyx* very short, deeply divided; segments oval, blunt; glands black. (*Blossom* golden yellow, reddish on the outside. E.) *Petals* set at the edge with black glands. Woodw. *Leaves* in opposite pairs. *Filaments* shining, yellow, in three sets, above eighteen in each. *Anthers* scarlet.

SMALL UPRIGHT ST. JOHN'S WORT. (Welsh: *Eurinllys mân syth.* E.) Hedges and heaths, in exposed sunny situations. Heaths near Norwich. Mr. Crowe. Heaths in Hertfordshire. Mr. Woodward. Wick Cliffs. Mr. Swayne. On a sloping bank near the wall on the east side of Edgbaston Park. Miss Charlotte Withering. (Knot's Hole, near Liverpool; Lady's Isle, Loch Katrine. E.) Dr Bostock. About Betchworth, Surry. Mr. Winch. Oversley woods, and Ragley woods, Warwickshire. Purton. Kirkland, Patterdale, and Keswick. Hutchinson. On gorsey banks, Anglesey. Welsh Bot. Pentland Hills, Roslin woods, and King's Park. Greville. E.) P. June—July.

(H. BARBA'TUM. Calyx and petals fringed and dotted: leaves ovate, dotted, clasping the stem: stem erect, slightly angular.

Jacq. Austr. 259—*E. Bot.* 1986.

Stems a foot or more in height, leafy, straight, scarcely branched except at top; round and purplish at the bottom. *Leaves* sessile, opposite, bluntish, entire, slightly revolute, smooth, veiny, sprinkled on both sides with dark purplish glandular dots. *Flowers* yellow, in a terminal, leafy, upright, forked panicle: *Bracteæ* and *calyx-leaves* spear-shaped, dotted, strongly and copiously fringed with long pale glandular hairs. *Petals* obovate, minutely fringed or toothed, dotted. *Stamens* in three sets. *Anthers* orbicular. *Styles* three. E. Bot.

BEARDED ST. JOHN'S WORT. This beautiful species was discovered by Mr. G. Don, by the side of a hedge near the wood of Aberdalgy in Strath Earn, Perthshire. P. Sept.—Oct. E.)

(3) *Styles five; stems shrub-like.*

(H. CALY'CINUM. Flowers solitary: stem branched, quadrangular: segments of the calyx obovate, blunt: leaves oblong.

E. Bot. 2017—*Curt. Mag.* 146—*Jacq. Fragm.* 6. 4—*H. Ox.* 35. 2—*fig. only.*

Roots creeping. *Branches* simple, leafy, square, each terminated by a *flower* larger than in any other *Hypericum*, of a rich golden yellow, with five, rarely four, *styles*. *Petals* often lobed. *Leaves* sessile, elliptic-oblong, entire, paler beneath. *Anthers* numerous, reddish. E. Bot. In our specimens the *leaves* are neither decidedly blunt, nor punctate, as described in E. Bot. *Flowers* growing singly; *petals* nearly one and a half inch long.

LARGE-FLOWERED ST. JOHN'S WORT. This showy plant was brought to England by Sir G. Wheeler in 1676, from its native woods about Belgrad, near Constantinople; is said not to grow indigenously in the intermediate countries; but it has been found recently in considerable abundance, and undoubtedly wild, about three miles from Cork, in the way to Bandon, by Mr. Drummond, Curator of the Botanic Garden of Cork. E.)

(Scotland also claims a station for this rare plant, in woods above Largs, on the western coast; as intimated by Mr. Hopkirk, in Hook. Scot.: and we have now the pleasure to communicate, by means of our friend Dr. Bostock, the first English native habitat, *viz.* in a wood near Hale, Lancashire, the seat of John Blackburne, Esq. M.P. where it has been lately found by Mr. Shepherd, Curator of the Liverpool Botanic Garden. E.) P. July—Sept.*

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* (It thrives well under trees, and is ornamental in shrubbery grounds. For remarks on the synonyms vid. Linn. Tr. vol. v. E.)

CLASS XIX.

SYNGENESIA.

ÆQUALIS.

(1) *All the Florets strap-shaped.*

CICHO'RIUM. *Recept.* slightly chaffy: *Down* chaff-like: *Cal.* double.

HYPOCHÆ'RIS. *Recept.* chaffy: *Down* somewhat feathery: *Cal.* tiled.

TRAGOPO'GON. *Recept.* naked: *Down* feathery, on a pedicle: *Cal.* simple.

PI'CRIS. *Recept.* naked: *Down* feathery: (*Seeds* furrowed transversely: E.) *Cal.* double.

LEON'TODON. *Recept.* naked: *Down* on a pedicle, simple: *Cal.* tiled, double; scales flexible.

CRE'PIS. *Recept.* naked: *Down* hair-like: *Cal.* double, with scales of different shapes, (outermost deciduous. E.)

PRENAN'THES. *Recept.* naked: *Down* hair-like: *Cal.* double, containing about five florets.

LACTU'CA. *Recept.* naked: *Down* hair-like, on a pedicle: *Cal.* tiled, simple, scale membranous at the edges.

HIERA'CIUM. *Recept.* naked, dotted: *Down* hair-like, sessile: *Cal.* tiled, egg-shaped.

SON'CHUS. *Recept.* naked: *Down* hair-like, sessile: *Cal.* tiled, tumid at the base.

LAP'SANA. *Recept.* naked: *Down* none: *Cal.* double, (scales of the innermost channelled. E.)

(2) *Flowers in globular heads.*

CARLI'NA. (*Cal.* tumid; outer scales spinous, inner rays coloured: *Recept.* chaffy: *Down* feathery. E.).

ARC'TIUM. (*Cal.* globose; scales spinous, bent inwards, and hooked. E.)

CAR'DUUS. (*Cal.* tiled, with spinous scales, tumid: *Recept.* hairy: *Down* deciduous, hair-like. E.)

ONOPOR'DON. *Cal.* with spreading, spinous scales, tumid: *Recept.* cellular, somewhat chaffy.

SERRAT'ULA. *Cal.* nearly cylindrical, tiled; scales rather acute, but not spinous: (*Down* permanent. E.)

[Centaurea nigra.]

(3) *Florets all tubular.*

EUPATO'RIUM. *Recept.* naked: *Down* feathery: *Cal.* tiled: *Style* cloven, prominent.

(CHRYSO'COMA. *Recept.* naked: *Down* simple, rough: *Cal.* hemispherical, tiled: *Style* scarcely longer than the florets. E.)

SANTOLI'NA. *Recept.* chaffy: *Down* none: *Cal.* tiled, hemispherical.

BI'DENS. (*Recept.* chaffy: *Down* awnlike, rough with reversed prickles: *Cal.* tiled with channelled scales. E.)

[Senecio vulgaris. Tanacetum vulgare. Tussilago Petasites. Aster Tripolium.]

SUPERFLUA.

(1) *Florets all tubular*

ARTEMIS'IA. *Recept.* almost naked: *Down* none: (*Cal.* tiled; scales converging: E.) *Florets* of the circumference without a petal.

TANACE'TUM. *Recept.* naked: (*Seed* with a membranous crown: *Florets* of the circumference trifid, sometimes wanting. E.)

CONY'ZA. (*Recept.* naked: *Down* hair-like, rough: *Florets* of the circumference trifid: *Cal.* tiled. E.)

GNAPHA'LUM. *Recept.* naked: *Down* feathery or hair-like: *Cal.* tiled with membranous coloured scales: (*Florets* of the circumference awl-shaped. E.)

[Senecio vulgaris. Tussilago Petasites, hybrida. Aster Tripolium. Erigeron. Bidens.]

(2) *Flowers radiate.*

BEL′LIS. *Recept.* naked, conical: *Down* none: *Cal.* hemispherical, with equal scales.

(MATRICA′RIA. *Recept.* naked, nearly cylindrical: *Down* none: *Cal.* tiled, nearly flat; scales membranous at the edges. E.)

CHRYSAN′THEMUM. (*Recept.* naked, rather convex: *Down* none: *Cal.* hemispherical, imbricated; scales with a dilated, membranous border. E.)

(PYRE′THRUM. *Recept.* naked: *Seed* crowned with a border: *Cal.* hemispherical, imbricated; scales rather acute, membranous at the edges. E.)

DORO′NICUM. *Recept.* naked: *Down* hair-like: *Strap-shaped* florets, without down: (*Cal.* a double row of equal scales, longer than the disk. E.)

I′NULA. *Recept.* naked: *Down* hair-like: *Anthers* with two bristles at the base.

ERI′GERON. *Recept.* naked: *Down* hair-like: *Florets* of the circumference very slender: (*Anthers* simple. E.)

SOLIDA′GO. *Recept.* naked, pitted: *Down* hair-like: *Cal.* tiled with close scales: *Florets* of the circumference five or six, remote.

CINERA′RIA. *Recept.* naked: *Down* hair-like: (*Cal.* simple, cylindrical; scales equal: *Seed* quadrangular. E.)

SENE′CIO. *Recept.* naked: *Down* hair-like: *Cal.* with scales shrivelled at the ends.

TUSSILA′GO. *Recept.* naked: *Down* hair-like: *Cal.* tumid at the base; scales somewhat membranous: (*Seed* obovate, compressed. E.)

AS′TER. *Recept.* naked: *Down* hair-like: *Cal.* lowermost scales spreading: (*Florets* of the circumference more than ten. E.)

AN′THEMIS. *Recept.* chaffy: *Down* none: *Cal.* hemispherical: (*Florets* of the circumference numerous: *Seed* crowned with a slight border. E.)

ACHILLE′A. *Recept.* chaffy: *Down* none: *Cal.* oblong: *Florets* of the circumference about five, somewhat heart-shaped.

FRUSTRANEA.

CENTAU'REA. *Recept.* bristly: *Down* hair-like, or feathery: *Florets* of the circumference tubular, (dilated, without stamens or style. E.)

NECESSARIA.

CALEN'DULA. *Recept.* naked: *Down* none: *Seeds* membranous.

[Tussilago Farfara. Erigeron.]

ÆQUALIS.

TRAGOPO'GON.* *Receptacle* naked: *Calyx* simple: *Down* feathery, pedicellate.

T. PRATEN'SIS. Calyx as long as the rays of the blossom: (leaves entire, keeled, açuminate, dilated at the base: E.) fruit-stalk cylindrical.

(*E. Bot.* 434. E.)—*Ludw.* 49—*Kniph.* 9—*Fl. Dan.* 906—*Lonic.* i. 95. 4—*Fuchs.* 821—*J. B.* ii. 1059. 1—*Trag.* 280—*Dod.* 256. 2—*Lob. Obs.* 297. 2, *and Ic.* i. 550. 2—*Ger. Em.* 735. 2—*Pet.* 15. 6—*H. Ox.* vii. *row* 1. 1—*Matth.* 537—*Ger.* 595. 2.

Blossoms yellow, showy, two inches over, opening early and closing before noon. (The feathery down of the *seeds* assumes an enlarged cobweb-like spherical form distended by the pedicels. E.) Whole *plant* smooth, stiff, strong, upright. *Leaves* very long and narrow, tapering. *Calyx, leaves* purplish at the edge. *Anthers* purple. *Pollen* yellow. *Seeds* crooked. *Receptacle*, having glandular substances in the little hollows at the base of each floret, which, when the blossoms fall, turn brown, the receptacle remaining white. (*Root* spindle-shaped, milky, sweet. *Stems* a foot and half high, often tinged with purple. *Leaves* alternate, embracing the stem, keeled, sharp-pointed, widening at the base. Fl. Brit. Mr. Woodward remarks that in Norfolk the *calyx* invariably exceeds the blossom; Mr. Stackhouse observes the same in Cornwall. E.)

YELLOW GOATS'-BEARD. (Welsh: *Barf yr afr felen.* E.) Meadows and pastures. B. June.†

T. PORRIFO'LIUS. Calyx half as long again as the rays of the blossom: leaves entire, stiff and straight: fruit-stalks thickening upwards.

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* (From τραγος, a goat; and πωγων, a beard; which the down of the seed somewhat resembles. E.)

† Before the stems shoot up, the roots, boiled like Asparagus, have the same flavour, and are nearly as nutritious. Cows, sheep, and horses eat it. Swine devour it greedily.

Jacq. Ic. i.—(*E. Bot.* 638. E.)—*Kniph.* 7—*Fl. Dan.* 797—*Ger.* 595. 1—*Park. Par.* 511. 8—*Matth.* 538—*Dod.* 256. 1—*Lob. Obs.* 297. 1, *and Ic.* i. 550. 1—*Ger. Em.* 735. 1—*Park.* 412—*Pet.* 15. 7 *and* 8—*H. Ox.* vii. 9. 5.

Stem-leaves shorter than in *T. pratensis,* scarcely longer than the space between the joints. *Calyx* about one-third longer than the blossom. *Blossom* dull purple. Woodw. (closing about noon. *Herb* glaucous, smooth, three or four feet high. *Anthers* nearly black. E.)

PURPLE GOATS'-BEARD. SALSAFY. Moist meadows and pastures. In Cornwall. Merrett. About Carlisle and Rose Castle, Cumberland. Dillenius. Marshes near Long-Reach, below Woolwich, and meadows near Edmonton. Blackstone. On the banks of the Calder, near Whalley, Lancashire. Gerard. Meadows below St. Vincent's Rocks, Bristol. Mr. Sowerby. About Ripton, Huntingdonshire. Mr. Woodward. Moist marshes in the parish of Whiteford, near Holywell. Bingley. Marshes near Purfleet, Essex. Mr. E. Forster, jun. in Bot. Guide. About Gorcot Hall, near Alcester. Purton. About Glasgow, but very rare. Hopkirk. E.) B. May—June.*

PI'CRIS.† *Receptacle* naked : *Calyx* double : *Down* feathery : *Seeds* with transverse furrows.

P. ECHIOI'DES. Outer calyx of five broad, prickly leaves, larger than the inner: (down standing on a pedicle. E.)

Curt. 150—(*E. Bot.* 972. E.)—*Pet.* 12. 12—*Ger.* 655. 2—*J. B.* ii. 1029. 1—*Lob. Ic.* i. 577. 2—*Ger. Em.* 798. 2—*H. Ox.* vii. 5. 38.

Root-leaves oval, scolloped, stiff with numerous warty protuberances, which, as also the ribs and edges, are set with short thorn-like hairs. *Stem*

Goats are not fond of it. (Both these species are among the most regular indices of the *Horologium Floræ,* closing their flowers so invariably about mid-day, that they have obtained the rustic designation of *Go to Bed at Noon:* for even the ploughman knows that

"In every copse and sheltered dell,
Unveil'd to the observant eye,
Are faithful monitors, who tell
How pass the hours and seasons by.

Broad o'er its imbricated cup
The *Goatsbeard* spreads its golden rays,
But shuts its cautious petals up,
Retreating from the noontide blaze."

Nor does the Burgomaster, luxuriating in his earthly paradise, disdain this humble memento of the winged moments;

——— "Then to lay one down
Upon a primrose bank, where violet flowers
Smell sweetly, and the mead's in bloomy prime,
Till Flora's clock, the *Goatsbeard,* mark the hours,
And closing says, Arise, 'tis *dinner time;*
Then dine on pyes and cauliflower heads,
And roam away the afternoon in Tulip beds." E.)

* The roots are esculent, and when cultivated in gardens for boiling or stewing are called Salsafy. (They are usually in season during winter, are very sweet, and contain a large quantity of milky juice. Salisbury. E.)

† (From πικρος, bitter; a prevalent flavour of these plants. E.)

firm, cylindrical, scored, usually purplish, much branched; with scattered, stiff, thorn-like hairs. *Leaves* heart-spear-shaped, waved at the edge, set with sharp stiff hairs, particularly on the edge and mid-rib. *Flowers* solitary, on fruit-stalks. *Fruit-stalks* somewhat thickening upwards. *Calyx*, leaves of the *outer* heart-shaped, taper-pointed, ending in a sharp awn, very much expanding, fringed with stiff hairs; scales of the *inner* fringed on the back. *Down* the length of the inner calyx, on a foot-stalk three or four lines long. *Seeds* shining, beautiful when magnified. Woodw. *Blossom* golden yellow, about an inch broad.

Bristly Ox-tongue. (Welsh: *Gwylaeth chwerw; Tafod y llew. Helmintia Echioides.* Willd. E.) Borders of corn-fields, on clayey soil. A. July—Aug.*

P. Hieracioi'des. (Calyx loose, outer scales much shorter than the inner: leaves lanceolate; radical ones toothed: down sessile: stem hirsute. E.)

E. Bot. 196—*Ger.* 234. 8—*Ger. Em.* 298. 7—*J. B.* ii. 1029. 2.

(*Plant* darker green than the preceding species, hairy, but not bristly. E.) *Stem* (about three feet high, branched, E.) firm, scored, rough with stiff hairs. *Leaves* wavy, rough, the *lower* on leaf-stalks, the *upper* sessile, spear-shaped, pointed, toothed; the *uppermost* strap-spear-shaped. *Fruit-stalks* branched, each branch bearing one flower. *Calyx* scarcely to be called double, the loose scales on the top of the fruit-stalk approaching to and at length tiled with the calyx, the leaves of the inner row nearly strap-shaped, parallel, hairy on the outside, exactly the length of the *feather*, sessile, thinly downy *Seeds* longitudinally and transversely furrowed. Woodw. (*Flowers* bright yellow, rather larger than the last. E.)

Hawkweed Ox-tongue. *Hedypnois Hieracioides.* Huds. Borders of corn-fields in calcareous soil. B. July—Aug.

SON'CHUS.† *Recept.* naked: *Calyx* tiled, tumid at the base: *Down* hair-like.

S. cœru'leus. Fruit-stalk and calyx hispid: leaves notched, almost lyrate: (terminal lobe very large, triangular. E.)

(*E. Bot.* 2425. E.)—*Fl. Dan.* 182—*Clus.* ii. 147. 1—*Ger. Em.* 294. 7—*Park.* 808. 1—*Park.* 807. 1—*J. B.* ii. 1006—*Ger.* 231. 6.

(*Stems* upright, about three feet high, undivided, leafy. *Leaves* alternate, embracing the stem, notch-lyre-shaped, slightly toothed, smooth, glaucous beneath; the upper ones strap-shaped, fringed. *Flowering-bunch* terminal, upright, solitary, hispid, reddish, covered with viscid glands. *Bracteæ* strap-shaped. *Calyx* hispid, tinged with red. *Blossom* purplish blue, twice as long as the calyx, forming a terminal *cluster*. *Anthers* red. *Seeds* compressed. *Down* harsh, not feathery. Fl. Brit. E.) *Flowers* sometimes white.

(Blue Sow-thistle. *S. cœruleus.* Cam. Epit. Sm. Hook. *S. cœruleus latifolius.* Bauh. Hist. *S. alpinus.* Huds. Oed. Willd. but very distinct from that of Linn. *S. Canadensis.* Linn. With. Ed. 3 and 4. Hull. Sym.

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* This is an agreeable pot-herb when young: the juice is milky, and then not too bitter.

† (According to Theophrastus the name is derived from ἀπὸ τȣ̃ σῶον ἔχειν, from its yielding a salubrious juice; but to which species this distinction applies is not obvious. E.)

We readily restore the more ancient and discriminative appellation, this being the only blue-flowered British *Sonchus*. Mountainous pastures. Borders of corn-fields about Willington and Howden-Pans, Northumberland. Wallis's Northumb. p. 186. (This alpine plant has hitherto been admitted into the British Flora solely on the above authority, the error of which Mr. Winch has recently detected, as referring only to *Cichorium Intybus* The genuine *S. cœruleus* has however been discovered in Aberdeenshire, on the mountain of Loch-na-gore, and on the Clova mountains by Mr. G. Don. E. Bot. E.) P. July—Aug.

S. ARVEN'SIS. Fruit-stalks and calyxes rough with hair, in a sort of umbel: leaves notched, heart-shaped at the base, (root creeping. E.)

Curt. 265—(*E. Bot.* 674. E.)—*Pet.* 14. 6—*Fuchs.* 319—*J. B.* ii. 1018. 1—*Lob. Obs.* 119. 3, *and Ic.* i. 237. 1—*H. Ox.* vii. 6. 12—*Lonic.* 92. 1—*Matth.* 765—*Ger.* 231. 7—*Ger. Em.* 294. 8—*Park.* 808. 3.

Leaves embracing the stem; segments triangular, toothed; teeth sharper and more prickly than those of *S. palustris;* the upper spear-shaped, but not tapering out to so great a length. *Seeds* oval, compressed, longitudinally and transversely furrowed. *Down* sessile. Woodw. *Stems* rough with glandular bristly hairs. *Leaves* amplexicaul, perfectly smooth, except at the edges, which are almost thorny. *Hairs* of the calyx and fruit-stalks pale green, terminated by yellow globules. (*Root* creeping, fleshy, lactescent. *Stem* three or four feet high, hollow. *Panicle* few-flowered, terminal, hispid. *Blossom* very large, golden yellow, closing about noon. E.)

CORN SOW-THISTLE. (Welsh: *Llaeth ysgallen.* E.) Corn-fields and ditch banks. P. Aug.*

S. PALUS'TRIS. Fruit-stalks and calyxes rough with hair, in a sort of umbel: leaves notched, arrow-shaped at the base: (root fleshy, branching, but not creeping. E.)

Curt. 298—*E. Bot.* 935. E.)—*Fl. Dan.* 1109, *and* 606—*Pet.* 14. 7—*Clus.* ii. 147. 3—*Ger. Em* 294. 9—*Park.* 808. 2—*H. Ox.* vi. 9, *row*.3. 11.

In habit it is very distinct from *S. arvensis*, but its structure is so much the same, that *S. palustris* might be supposed to have originated from that species. *Flowers* closing in the afternoon. Linn. *Root* not creeping. *Stems* several, six to ten feet high. Curt. *Lower stem-leaves* very large; upper arrow-shaped, and embracing the stem at the base; segments spear-shaped, variously curved, two or three pair, with a terminal one very long, smooth, finely toothed at the edge, the principal rib running near the inner edge. *Upper-leaves* arrow-spear-shaped, lengthened out into an extended point. *Floral-leaves* awl-shaped. Woodw. *Blossom* yellow, (twice as long as the calyx. One of the largest herbaceous plants. E.)

TALL MARSH SOW-THISTLE. Watery places and banks of rivers. On those of the Thames about Greenwich, Blackwall, and Poplar. Ray.

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* The flowers regularly follow the course of the sun; (indeed far more so than does the Sun-flower, (properly so denominated from its golden colour and radiated efflorescence), which has not the power thus to pay homage to the God of Day, its strong and rigid stem resisting the stimulus of light. E.) Cows and goats eat it. Horses are fond of it. (*Larva Sonchi* frequents this and other species. E.)

(On the bank of the Waveney, between Beccles and Yarmouth. Mr. Woodward. Near Streatham Ferry, Isle of Ely, Rev. R. Relhan, (but said not to have been found there latterly. Several places about Nottingham. Deering. River side at Reedham, Norfolk, Mr. Wigg, in Bot. Guide. A single plant said to have been found at Lochend, by Mr. Neill. Grev. Edin. E.) P. July—Aug.

S. **OLERA'CEUS.** Fruit-stalks cottony: calyx smooth: (leaves notched toothed. E.)

E. Bot. 843. E.)

Leaves closely amplexicaul. *Fruit-stalks* at length becoming smooth. Linn. *Upper-leaves* frequently jagged and indented, like the lower, but not so deeply. Woodw. (*Flowers* rather small, pale yellow, rarely white, only expanded in fine weather. *Root* spindle-shaped, milky and bitter, as is the whole herb. *Stem* branched, brittle, two or three feet high. *Leaves* with acute lobes, more or less toothed or spinous. E.)

SOW-THISTLE. HARE'S LETTUCE. MILKWEED. (Irish: *Bainne Muck.* Welsh: *Moch-ysgallen gyffredin.* E.)

Var. 1. *Lævis.* Leaves smooth, the lower wing-cleft, lower segments long.

Curt. 123—*Ger.* 231. 5—*Clus.* ii. 146. 1—*Dod.* 643. 1—*Lob. Obs.* 119. 1, *and Ic.* i. 235. 2—*Ger. Em.* 292. 3—*H. Ox.* vii. 3. 1—*Pet.* 14. 10—*Ger.* 230. 4—*Matth.* 497.

Common Sow-thistle. Smooth Jagged Sow-thistle. Cultivated ground, especially in a rich soil, dunghills and hedges. A. June—Aug.*

Var. 2. Segments fewer, the terminal one triangular and very broad. Ray.

Fl. Dan. 682—*Blackw.* 130—*Ger.* 230. 3—*Ger. Em.* 292. 4—*Park.* 806. 3—*J. B.* ii. 1016. 1—*H. Ox.* vii. 3, *row* 1. 2—*Pet.* 14. 8—*Matth.* 496. *S. aspera.*

Smooth Broad Sow-thistle.

Var. 3. *Asper.* Leaves prickly, jagged, shining on the upper surface, the edge waved and set with thorny teeth; the lower lobes rounded.

Fl. Dan. 843—*Blackw.* 30—*Ger.* 229. 2—*Park.* 229. 2—*J. B.* ii. 1016. 2—*Fuchs.* 675—*Pet.* 14. 5.

Stem two or three feet high, upright, thick, angular; the angles thin, membranous, tinged with purple. *Leaves* wing-cleft; segments variously jagged and toothed, some extending almost to the mid-rib, the lower leaves a foot long; mid-rib broad, white, and smooth. *Fruit-stalks* soon losing their tomentose character. *Calyx* scales each with two or three little thorns on the back.

Prickly Jagged Sow-thistle. Uncultivated ground, sides of roads and hedges.

Var. 4. Leaves prickly, entire. St.

Fuchs. 674—*Dod.* 643. 3—*Lob. Obs.* 118. 2. 3, *and Ic.* i. 235. 1—*Ger. Em.* 291. 2—*J. B.* ii. 1014. 2—*Park.* 803. 1—*H. Ox.* vii. 2, *row* 3. 5—*Pet.* 14.

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* The leaves and tender shoots are good among other pot-herbs. They are a very favourite food with hares and rabbits. Sheep, goats, and swine eat it. Horses are not fond of it. (The beautiful parasitic *Uredo Sonchi*, which before bursting through its cuticle is of a bright scarlet colour, and at length of an orange yellow, is found on the stalks and leaves of this species and *S. arvensis.* E.)

4—*Lonic*. i. 93. 1—*Dod*. 643. 2—*Lob*. *Ic*. i. 234. 2—*Ger*. *Em*. 291. 1—*H*. *Ox*. vii. 2. 8.

(*Prickly-dented Sow-thistle*. E.) Fields, and in woods where the underwood has been cleared.

Var. 5. Leaves inversely egg-shaped, tapering below into leaf-stalks.

Pluk. 61. 5—*Pet*. 14. 1.

(*Round-leaved Sow-thistle*. E.) Corn-fields about London.

Var. 6. Leaves strap-oblong, rounded at the end.

Pluk. 62. 4—*Pet*. 14. 3.

(*Narrow-leaved Sow-thistle*. E.)

Var. 7. Stemless; leaves spread on the ground, deeply wing-cleft; segments sharply toothed.

I found this singular variety on Portland Island in the month of May. The flowers sessile close upon the root. Possibly the effect of its maritime situation.

LACTU'CA.* *Receptacle* naked: *Calyx* tiled, cylindrical scales membranous at the edge. *Down* hair-like, pedicellate.

L. **SCARI'OLA**. Uppermost leaves perpendicular, sinuated, their mid-rib prickly on the back.

E. *Bot*. 268—*Fuchs*. 301—(*Fl*. *Dan*. 1227. E.)—*Dod*. 646—*Ger*. *Em*. 309, 3—*J*. *B*. ii. 1003—*Pet*. 15. 3—*H*. *Ox*. vii. 2, 17—*Matth*. 522—*Lob*. *Obs*. 118. 1, *and Ic*. 1. 234—*Park*. 814. 2—*Barr*. 135—*Trag*. 259.

(Whole *plant* glaucous, lactescent, but milder than *L*. *virosa*. *Stem* two to three feet high, terminating in a panicle. E.) *Stem-leaves* constantly with deeper winged clefts than those of *L*. *virosa*. • *Flowering branches* pointing upward, not expanding. *Flowers* smaller. ' *Pedicle* of the *down* much shorter. Woodw. *Blossom* pale yellow, rather small. E.)

PRICKLY or MILD-SCENTED LETTUCE. On rubbish, sides of corn-fields, ditch banks, and stony ground. Isle of Ely. Rev. R. Relhan. Burwell, near Newmarket. Mr. Dawson Turner. (On banks near Pancras, Middlesex, and in a sand-pit at Charlton Wood, Kent. Mr. E. Forster, jun. Near the entrance into Peak's Hole, Derbyshire. Mr. J. Martin, in Bot. Guide. E.) . B. Aug.

L. **VIRO'SA**. All the leaves horizontal, toothed; mid-rib prickly on the back.

(*E*. *Bot*. 1957. E.)—*Collin*, *Obs*. vi. *Præf*. *p*. ix.—*Woodv*, 250—*J*. *B*. ii. 1102—*Pet*. 15. 2—*H*. *Ox*. vii. 2. 16.

Stem two to four feet high. *Root-leaves* oblong, wedge-shaped, toothed at the edge. *Stem-leaves* arrow-shaped, embracing the stem, either entire or wing-cleft, sharply toothed. *Flower-leaves* arrow-shaped, half embracing the stem, broad at the base, tapering to a sharp point, one at the base of each flowering branch. *Flowering branches* expanding. *Flowers* sessile, or on short fruit-stalks. *Floral-leaves* similar to the stem-leaves but smaller, one at the base of each fruit-stalk, and others still smaller on the fruit-stalks. *Calyx,* scales unequal, spear-shaped. *Seeds* furrowed, rough, black. Woodw. (*Plant* abundantly latescent. E.) *Blossoms* numerous, small, yellow, closing before noon.

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* (From *lac*, *lactis*, milk; the whole plant being lactescent. E.)

CUT LETTUCE. STRONG-SCENTED LETTUCE. Ditch banks. (Common in calcareous soil. E.) Borders of fields. In a stone quarry at Thorp Arch, Yorkshire. Mr. Wood. World's End, near Stepney, and banks of the Thames between Blackwall and Woolwich. Mr. Jones. (Around Lydden Spout, South Kent, it attains a height of seven or eight feet, adding a remarkable feature to the precipitous cliffs, and environed by numerous botanical attractions. Mr. G. E. Smith. E.) Old walls in Bungay, and near Diss. Mr. Woodward. (Bank between the castle at Barnard Castle and the river Tees; on the banks of Tweed, above Coldstream bridge. Winch Guide. At the base of Arthur's Seat, Edinburgh. Lightfoot. Stone-bridge, Warwickshire. Bree, in Purton. E.)
B. July—Aug.*

Var. 2. Leaves entire.

Pet. 15. 1—*Trag.* 268—*Lonic.* i. 91. 3—*Lob. Adv.* 89, *and Ic.* i. 241. 1—*Ger. Em.* 309. 1—*Park.* 813.

(*Lactuca sylvestris, folio non laciniato.* R. Syn. E.) *L. Scariola* β. Huds. St.

With variety 1, but less frequent. Ray.

L. SALIG'NA. Leaves hastate-linear or pinnatifid, sessile: mid-rib prickly on the back.

Jacq. Austr. 250—(*E. Bot.* 707. E.)—*Hall. Jen.* 4, *at p.* 207—*C. B. Pr.* 68. 1—*Park.* 783. 4—*H. Ox.* vii. 6. 18—*Pet.* 15. 4.

(*Plant* very slender. *Stem* two feet high, wavy, pale brown or whitish, leafy throughout. Sm. E.) *Leaves* arrow-shaped at the base; the lower wing-cleft; segments few, alternate, strap-shaped, finely toothed, with a sharp point at the end, somewhat hooked, the terminal one long: the upper entire, strap-shaped; the mid-rib not always prickly. *Floral-leaves* arrow-shaped, broad at the base, tapering to a point. *Flowers* nearly sessile, small, Woodw. yellow, (longer than the glaucous calyx, expanding only in fine weather, forming tufted clusters. E.)

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* The juice smells like opium; it is milky, acrid, and bitter; (and may be administered beneficially as a mild anodyne. Lettuce lozenges are sold in the shops, and recommended for coughs. E.) Dr. Collin, of Vienna, relates twenty-four cases of dropsy, out of which twenty-three were cured by taking the extract prepared from the expressed juice, in doses from eighteen grains to three drams in twenty-four hours. It commonly proves laxative, in a degree diaphoretic, and removes thirst. It must be prepared when the plant is in flower. (Dr. Swediaur says the juice is sedative and diuretic, and commendable in dropsy and jaundice. The Caledonian Horticultural Society, in 1824, awarded their honorary gold medal to Mr. F. G. Probart, of Lincolnshire, for his method of cultivating and preparing *Lactucarium,* or Lettuce Opium. Mr. Salisbury remarks that all kinds of garden, or other Lettuce, yield milky juice with similar properties: but that the juice is not milky till such time as the plant produces seed-stalks, and then the taste in general is too nauseous for it to be eaten. This juice is often sufficiently tenacious to detain ants and other insects, and so exuberant as to exude even upon the touch of their light feet. Can its narcotic quality produce any morbid influence over these little invaders? *Livia Lactucæ* is not deterred by these dangers. Mr. Markwick relates that the leaves chopped small, are used to fatten ducks and turkies. The land tortoise feasts upon this and other lactescent plants. It is fabled that, after the death of Adonis, Venus, inconsolable, sought sweet oblivion by reclining on a bed of Lettuce; perhaps a figurative allusion to its anodyne properties.

"And now let *Lettuce*, with its healthful sleep,
Make haste,"—Columella. E.)

LEAST LETTUCE. NARROW-LEAVED LETTUCE. Ditch banks and pastures in chalky soil. (On a ditch bank by the road side, at Spechley, near Worcester. Purton. E.) About Pancras church. Ray. Lanes in Dorsetshire, but rare. Pulteney. B. Aug.

PRENAN'THES.* *Receptacle* naked: *Calyx* double: *Down* hair-like, nearly sessile: *Florets* about five, in a single row.

P. MURA'LIS. Florets five: leaves runcinate.

Curt.—(*E. Bot.* 457. E.)—*Fl. Dan.* 509—*Clus.* ii. 146. 2—*Lobs. Obs.* 119. 2. *and Ic.* i. 236. 1—*Ger. Em.* 293. 5—*Park.* 805. 2—*J. B.* ii. 1004—*Pet.* 15. 5.

(*Root* rather ligneous. A slender, smooth, brittle, lactescent plant, about a foot high; *stem* leafy, hollow, cylindrical. *Florets* yellow, opening wide, longer than the purplish calyx. Fl. Brit. E.) *Root-leaves* on long leaf-stalks, deeply notched; lower segments few, small, somewhat oval, terminal one large, somewhat triangular, with five lobes, resembling the leaves of Ivy in its creeping state, (sometimes purplish beneath. E.) *Flowering branches* subdivided. *Fruit-stalks* slender, each with one flower. Woodw. *Stem-leaves* amplexicaul, deeply notched; *segments* opposite, toothed, terminal one largest. *Calyx, outer,* scales three, spear-shaped; *inner* strap-shaped, generally coloured. *Seeds* oblong, compressed, scored. *Down* supported by a short pedicle, (which lengthens as the seed ripens. E.)

(IVY-LEAVED WALL-LETTUCE. E.) Walls. Shady woods, (particularly in calcareous soil. E.) P. July.

LEON'TODON.† *Receptacle* naked: *Calyx* tiled, double; the inner scales parallel, equal: *Down* hair-like.

(1) *Down pedicellate.*

L. TARAX'ACUM. Outer scales of the calyx entire, reflexed: leaves smooth, notched, and acutely toothed.

Curt.—(*E. Bot.* 510. E.)—*Mill. Ill.*—*Blackw.* 501—*Woodv.* p. 7—*Fl. Dan.* 574—*Walc.*—*Ger.* 228. 1—*H. Ox.* vii. 8, *row* 2. 1—*Dod.* 636. 1—*Lob. Obs.* 117. 2, *and Ic.* i. 232. 2—*Ger. Em.* 290. 1—*Park.* 780. 1—*Pet.* 11. 7—*Matth.* 506—*Fuchs.* 680—*J. B.* ii. 1035—*Trag.* 262—*Lonic.* i. 92. 2—*Blackw.* 1.

(*Root* spindle-shaped, black. E.) *Scape* hollow, smooth, cylindrical, fragile, semitransparent, nearly a span high, bearing one large flower. *Leaves* all radical, varying from wing-cleft, in a very dry situation, to nearly entire in a moist one. *Calyx,* scales perfectly smooth. *Seeds* furrowed longitudinally, sharply toothed upwards. *Down* on a long pedicle; rays simple. Woodw. The notches in the leaves hollowed out like the teeth in a large timber saw. *Seeds* flat, scored, prickly upwards. *Blossom* yellow, closing early in the afternoon.

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* (From πρηνης, prone, and ανθος, a flower; the blossom drooping or hanging down. E.)

† (From λεων, a lion, and οδους, a tooth; its jagged leaves resembling such. E.)

Common Dandelion. (from the French *Dent de Lion.* Irish: *Bearnan Bearnagh.* Welsh: *Dant y llew cyffredin.* Gaelic: *Am bearnan-bride. L. officinale.* With. Ed. 4. Hull. *L. Taraxacum.* Linn. E.) Meadows, pastures, road sides, ditch banks, &c. P. April—Sept.*

Var. 2. Leaves narrower, fewer, more deeply cloven. Seeds reddish-brown. Ray.

Pet. 11. 8.

Grows along with var. 1. and flowers most of the summer.

Var. 3. *Palustris.* Outer scales of the calyx upright, close to the inner, entire; leaves spear-shaped, very entire, or only toothed.

(*E. Bot.* 553. E.)—*Scop.* 48, *at* ii. *p.* 100.

Root-leaves oblong, broader towards the end, pointed with teeth, smooth, mid-rib red. *Calyx* smooth; outer scales egg-shaped, pointed, somewhat membranous at the edge; the inner strap-shaped. Lyons. *Calyx*, the lowermost scales at first upright, afterwards bent back. Huds.

(That very accurate Botanist Mr. Dawson Turner appears to have enjoyed most favourable opportunities of remarking this plant, the *L. palustre* of Fl. Brit. Lyons, and Relhan; *L. Taraxacon* of With. Ed. 3: and he thence infers that it is not specifically distinct from *L. Taraxacum.* He states, " they both grew abundantly in the marshes about Yarmouth, and I constantly remark that though all which are found in the wettest places are clearly *L. palustre*, yet, as the soil becomes dry, the scales of the calyx are less erect, the colour is less purple and shining, and the leaves take regularly more and more of a runcinate form, till at last they quite lose themselves in the common species. Bot. Guide. p. 441. Messrs. Hooker and Greville also entertain doubts of this species.

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* Early in the spring, whilst the leaves are yet white, and hardly unfolded, they are an excellent ingredient in salads. (It may be readily blanched by cultivation (by which mean it is in a great measure deprived of its acrid juice), and its use is supposed to have been introduced by French refugees. E.) The French eat the roots and the blanched leaves, with bread and butter.—(At Gottingen, the roots roasted are used by the poor as a substitute for coffee. Along the banks of the Rhine, Dandelion is especially cultivated for this purpose. Rev. H. T. Ellicombe. E.) Children that eat the plant in the evening experience its diuretic effect, hence the origin of a vulgar name both in this country and among other European nations. When a swarm of Locusts had destroyed the harvest in the island of Minorca, many of the inhabitants subsisted upon this plant. The expressed juice has been given, to the quantity of four ounces, three or four times a day; and Boerhaave had a great opinion of the utility of this and other lactescent plants in visceral obstructions. (As a deobstruent, no plant excels it. The expressed juice is the most efficacious way of giving it; next to that the extract. I often join with it advantageously the common Fumitory. Purton. The globular white heads, formed by the expansion of the pappus or down, afford amusement to children;

"*Dandelion* with globe of down,
The school-boy's clock in every town,
While the truant puffs amain
To conjure lost hours back again."

At rural fêtes we have likewise observed the youngsters aiding the music of the merry dance with a humble imitation of Pandean pipes, made of the hollow flower-stalks fitted into each other. E.)—Goats eat it; swine devour it greedily; sheep and cows are not fond of it; horses refuse it; the seeds are acceptable to small birds. *Phalæna Fascelina* and *Thrips Physopus* feed upon it. Linn. (*Cryptocephalus sericeus* harbours in the flowers. The milky juice is most abundant in the root before the flower-stem shoots up. The bitterness is destroyed by drying, therefore the recent roots only should be used. Drs. W. Philips and Pemberton have published in its favour. E.)

Marsh] *Dandelion.* E.) *Hedypnois paludosa.* Scop. *Leontodon Raii.* Gouan. *L. Taraxacum paludosum.* Lightf. *Picris scapo unifloro, foliis glabris semipinnatis, calyce levi.* Hall. *Leontodon Taraxacum δ palustris.* Huds. With. Ed. ii.

Hinton Moor, Cambridgeshire. Lyons. Moist places on the sides of mountains in the Isle of Skye. Lightfoot. (Brome Fen, Norfolk. Mr. Woodward. Wet meadows at Barton Bendish. Rev. R. Forby. At Holford ferry, Cornwall. Rev. Pike Jones. In meadows of Dinam demesne, Anglesey. Welsh Bot. A very small variety of this plant has been remarked by Mr. Griffith near Llyn y Cwn, Carnarvonshire. E.)

P. June—(July. E.)

(2) *Down sessile.*

L. AUTUMNA'LE. Stem branched; fruit-stalks scaly: leaves spear-shaped, toothed, very entire, smooth: down mostly sessile.

(*E. Bot.* 830. E.)—*Fuchs.* 320—*J. B.* ii. 1031—*Trag.* 265—*Dod.* 639. 4—*Ger. Em.* 297. 3—*Lonic.* i. 92. 3—*Ger.* 233. 4—*Dod.* 639. 4—*Lob. Obs.* 120. 1, *and Ic.* i. 237. 2—*Ger. Em.* 296. 2—*Park.* 794. 4—*H. Ox.* vii. 7. 6—*Matth.* 766—*Pet.* 12. 1.

Root in the second or third year dying at the end, appearing as if bitten off. *Stems* sometimes thrice as tall as the leaves. *Leaves* spear-shaped, quite smooth; teeth bluntish. *Flowering branches* nearly of an equal height. *Calyx* inversely egg-shaped, tapering downwards, beset with tapering blackish hairs, and a small quantity of cottony substance. *Down* of the central florets, sometimes tapering out into a kind of short pedicle; feathered, brownish-white, which colour readily distinguishes it from *Hypochæris radicata,* which it very much resembles, and the others of the same tribe which flower in the meadows at the same time. St. *Florets* yellow on both sides. *Style* and *summit* set on the upper part with very short and exceedingly fine, white, bristly hairs. *Down* about the length of the seed, rather longer than the tubular part of the blossom. *Seeds* compressed, striated.

AUTUMNAL DANDELION. YELLOW DEVIL'S BIT. (*L. autumnale.* Linn. Hull. Sibth. *Hedypnois autumnalis.* Huds. Relh. Fl. Brit. *Apargia autumnalis.* Willd. Sm. Hook. E.) Meadows and pastures.

P. July—Aug.

Var. 2. Leaves hairy. Ray.

With variety 1, and with us the most common. St.

Var. 3. Leaves wing-cleft.

Ger. 233. 3—*Pet.* 12. 2.

Hieracium præmorsum laciniatum. R. Syn. 164.

Pastures about London.

Var. 4. *Dwarf.* Leaves pointed. Pet.

Pet. 12. 3.

Hedges about London.

Hieracium folio acuto minus. R. Syn. 164.

Var. 5. *Dwarf.* Leaves blunt, like those of *L. Taraxacum.* Pet.

Pet. 12. 4.

With var. 4.

L. HIS'PIDUM. (Stalks naked, single-flowered: E.) all the scales of the calyx upright: leaves toothed, very entire, hispid, bristle-like hairs forked.

Curt. 314—(*E. Bot.* 554. E.)—*Fl. Dan.* 862—*The figures of the older Botanists are not sufficiently exact to allow of determining whether they intended them for this or the next species.*

Leaves on leaf-stalks, spear-shaped, somewhat hoary; hairs forked and simple. *Seeds* slender, rough, striated. the upper part of the ridges toothed, the lower warty; as long as the down. Woodw. *Root* as if bitten off. *Stalk* six to sixteen inches high. (*Flowers* drooping in the bud, bright yellow; *florets* of the circumference greenish on the outside. E.) The *floral-leaf* mentioned by Linneus as discriminating this species from *L. hirtum*, which has no such appendage, is not always present.

ROUGH DANDELION. (*L. hispidum.* Linn. With. Relh. Hull. Sibth. Abbot. Curt. *Hedypnois hispida* Huds. Relh. Fl. Brit. *Apargia hispida.* Willd. Sm. Hook. Meadows and pastures. Meadows near Worsley Mill, and near Chaddock Hall, Lancashire. Mr. Evans. E.) Lulworth Cove, Dorsetshire. St. Vincent's Rocks, Bristol. P. May—Sept.

Var. 2. Leaves entire, and sometimes with shallow teeth, spear-shaped, rough. Linn.

Clus. ii. 141. 2—*Ger. Em.* 302. 3—*Park.* 799 12—*J B.* ii. 1038—*H. Ox.* vii. 7. 12, *row* 2. *f.* 4—*Pet.* 11. 5—*Ger.* 238. 3. *These figures are cited on the authority of* Ray.

Dens leonis montanus angustifolius. R. Syn. 171.—*L. Taraxacum* γ. Huds.

Near the top of the Glyder mountain, near Lanberris

L. HIR'TUM. All the scales of the calyx upright: leaves toothed, hairy: hairs undivided. Linn. outer row of seeds destitute of down. Hal."

Curt.—(*E. Bot.* 555 E.)—*Fl. Dan.* 901

Leaves rather stiff, and as it were dry to the touch, and the central parts very much curled when dry; segment oblique; the hairs undivided at the point. *Calyx* pendent before flowering, channelled when the seeds are ripe: the outermost *scales* dilated on each side at the base, with a fold between. *Blossom*, the florets of the circumference yellow underneath, and not greenish. Linn. *Stem* six inches high. *Seeds* of the circumference crowned with shallow leafy scales, instead of down; those of the centre with a feathered down. Hall. A much smaller *plant* than *L. hispidum*, calyx smooth, leaves hairy. In *L. autumnale* the calyx is hairy and the leaves smooth. Afzel. The want of down to the outer row of seeds sufficiently distinguishes this plant from its congeners. *Flowers* yellow.

SMALLER ROUGH DANDELION. (*L. hirtum.* Linn. With. Curt. *Hedypnois hirta.* Relh. Fl. Brit. *H. hispidum, hirtum* β. Huds. *Apargia hirta.* Hoffm. Sm. Hook. *Thrincia hirta.* Roth. Willd. Galp. E.) Heaths and commons. Frequent in Devonshire and Cornwall. (Pastures and corn-fields in Astley and Tildesley, Lancashire. Mr. Evans. (On the sea-banks at Tynemouth: rare in the North. Mr. Winch. North Queensferry. Maughan, in Hook. Scot. E.) P. June—Aug.

HIERA'CIUM.* *Receptacle* generally naked: *Calyx* tiled, egg-shaped, sometimes double: *Down* mostly sessile, hair-like, rarely plumose.

(*Obs.* This genus has been found so intricate, that the means of discriminating the intermingling varieties have scarcely yet been discovered. We have ventured to admit several species, which, from the authority on which they rest, may be considered well ascertained; but, notwithstanding the labours of Smith in Linn. Tr. and other works, we are still unable altogether to rectify the confusion of synonyms which in some of the older species has long prevailed. E.)

(1) *Stalk leafless, single-flowered; Down simple.*

H. PILOSEL'LA. Leaves very entire, egg-shaped, cottony beneath: suckers creeping.

Curt. 279—(*E. Bot.* 1093—*Fl. Dan.* 1110. E.)—*Ludw.* 144—*Walc.*—*Blackw.* 365—*Fuchs.* 605—*Trag.* 278—*Lonic.* i. 95. 3—*J. B.* ii. 1039—*Park.* 690. 2—*H. Ox.* vii. 8. 3—*Pet.* 11. 1—*Dod.* 67—*Lob.* 254. 1, *and Ic.* i. 479. 1—*Ger. Em.* 638. 2—*Park.* 690. 1—*H. Ox.* vii. 8, *row* 1, *f.* 1—*Ger.* 513. 2.

Suckers covered with down, and hairy, lying close to the ground, not throwing out flowering stems in the autumn, as do *H. dubium* and *auricula*. *Florets* pale yellow, with a broad purple stripe on the under side. Woodw. *Calyx*, hairs terminated in black globules. (*Seeds* brown, striated. E.)

CREEPING MOUSE-EAR. MOUSE-EAR HAWKWEED. (Irish: *Clovas liah.* Welsh: *Heboglys tonllwyd* E.) Dry meadows, pastures, and walks.
P. May—Sept.†

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* (From ἱέραξ, a hawk, because that bird, according to Pliny, was wont to quicken his sight with its juice; or rather, perhaps, from the mixture of black and yellow in some species resembling the colour of a hawk's eye, and whence, possibly, the above inference. E.)

† This differs from other lactescent plants, being less bitter, and more astringent. (It was formerly kept in the shops as an astringent, and designated *Auricula muris*, from the resemblance of the hairy termination of its leaves to a mouse's ear. E.) It is esteemed hurtful to sheep. An insect of the Cochineal genus (*Coccus polonicus*) is often found at the roots. Act. Ups. 1752. Goats eat it. Sheep are not fond of it. Horses and cows refuse it. (The different species contributing to the *Horologium Floræ*, or Botanical Clock, (Vid. *Anagallis*), (as originally described by Linnæus, and since exhibited in the Jardin des Plantes at Paris), we cannot refrain from transcribing the appropriate lines of Charlotte Smith.

"In every copse and shelter'd dell,
Unveil'd to the observant eye,
Are faithful monitors, who tell
How pass the hours and seasons by.

The green-robed children of the Spring
Will mark the periods as they pass,
Mingle with leaves Time's feathered wing
And bind with flowers his silent glass.

Mark where transparent waters glide,
Soft flowing o'er their tranquil bed;
There, cradled on the dimpling tide,
Nymphæa rests her lovely head.

H. alpi'num. Leaves oblong, entire, toothed: stalk almost naked: calyx shaggy with silky hairs.

(*E. Bot.* 1110. E.)—*Lightf.* 18, *p.* 434—*Allion.* 14. 2—*Col. Ecphr.* ii. 30. 1—*H. Ox.* vii. 7. 5—*Pet.* 11. 2—*Ray* 6. 2. *at p.* 168—(*Fl. Dan.* 27, *may possibly be the same plant in a cultivated state.*)

Leaves egg-oblong, slightly toothed, sprinkled on both sides with white expanding hairs. *Stalk* thick, with white hairs, brown at the base. *Floral-leaves* small, one or two on the upper part of the stalk. *Calyx* swoln, set with numerous white projecting hairs. *Blossom* large, deep-

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But conscious of the earliest beam,
She rises from her humid nest,
And sees reflected on the stream
The virgin whiteness of her breast,

Till the bright day-star to the west
Declines, in Ocean's surge to lave;
Then, folded in her modest vest,
She slumbers on the rocking wave.

See *Hieracium's* various tribe,
Of plumy seed and radiate flowers,
The course of time their blooms describe,
And wake or sleep appointed hours.

Broad o'er its imbricated cup
The *Goatsbeard* spreads its golden rays,
But shuts its cautious petals up,
Retreating from the noontide blaze.

Pale as a pensive cloistered nun,
The *Bethlem Star* her face unveils,
When o'er the mountain peers the sun,
But shades it from the vesper gales.

Among the loose and arid sands
The humble *Arenaria* creeps;
Slowly the purple star expands,
But soon within its calyx sleeps.

And those small bells so lightly rayed
With young Aurora's rosy hue,
Are to the noontide sun displayed,
But shut their plaits against the dew.

On upland slopes the shepherds mark
The hour, when, as the dial true,
Cichorium to the towering lark
Lifts her soft eyes serenely blue.

And thou, "Wee crimson tipped flower,"
Gatherest thy fringed mantle round
Thy bosom, at the closing hour,
When night-drops bathe the turfy ground.

Unlike *Silene*, who declines
The garish noontide's blazing light;
But, when the evening crescent shines,
Gives all her sweetness to the night.

Thus in each flower and simple bell,
That in our path betrodden lie,
Are sweet remembrancers who tell
How fast their winged moments fly. E.)

yellow. Linn. Three or four inches high. Whole plant set with long hairs, especially the fruit-stalk and the calyx. *Leaves* tapering downwards into long leaf-stalks. *Fruit-stalks* but little longer than the leaves. (*Root* rather woody. E.)

MOUNTAIN HAWKWEED. Mountains, near the summits in dry soil. Rocks on Glyder and Trigfylchau near Llanberris. Llyn y Cwn, near Snowdon. Pennant. (Rocks on Ben Bourde; on Malghyrdy, Ben Lawers, and Lochain y Gair. Mr. Brown. E.) P. July—Aug.

H. TARAX'ACI. Leaves spear-shaped, runcinate, smooth: stalk almost naked, (swollen towards the top: E.) calyx shaggy.

(*E. Bot.* 1109. E.)—*Retz.* 4. 2—*Allion.* 31. 1.

Leaves so much like those of *Leontodon autumnale*, and the *stalk* and *flowers* so exactly resembling those of *H. alpinum*, that if the stalk and flower of the latter were added to the leaves of the former, a fair specimen of the plant in question would be produced. *Stalk* (three to six inches high, E.) with the minute rudiments of leaves, hairy, thickening towards the (yellow, E.) flower, swelling at the end, like the calyx, with brown hairs. Linn. (The fructification of *Taraxaci*, on accurate examination, will be found far too dissimilar to that of *T. alpinum*, to allow of the conjecture that it might prove a hybrid offspring from the latter. E.) *Down* sessile, decidedly feathery, (which, rather than "simple," would refer this plant, according to the new arrangement, to the genus *Apargia*. E.) Lightf. on whose authority it principally rested as a British plant, (till re-discovered by T. Wynne Griffith, Esq. E.)

ALPINE HAWKWEED. *Hedypnois Taraxaci.* Vill. Fl. Brit. *Hieraceum Taraxaci.* Linn. Lightf. With. Retz. Dicks. Hull. *Apargia Taraxaci.* Willd. Sm. Hook. E.) Sides of mountains in wet ground, but not common in Wales, (and the Highlands. E.) Ben-na-Caillich mountain in the Isle of Skye. Lightfoot. (On Rhiwr Glyder about one hundred yards above Llyn y Cwn. Mr. Griffith. E.) P. July—(Aug. E.)

(2) *Stalk naked, many-flowered.*

H. DU'BIUM. Leaves nearly entire, egg-oblong, obtuse, hairy: suckers creeping: (calyx bristly. E.)

(*E. Bot.* 2332. E.)—*Fl. Dan.* 1044.

Leaves longer and narrower than in *H. pilosella,* slightly concave, hairy on both sides, but more sparingly so than in *H. pilosella,* green above, greyish, but not cottony, underneath. *Stalks* six to nine inches high, upright, nearly smooth below, with mostly two flowers, rarely one. *Pedicles* equal, wide apart, as the *calyxes* clothed with hairs, bearing black globules. *Florets* pale-yellow on both sides. *Seeds* oval, scored; *down* sessile, as long as the calyx.) Such were the appearances in June and July, but in autumn as follows:—*Suckers* throwing out branches, and terminated by a flowering stem. *Branches* not rooting, with alternate leafy branches. *Stem* declining at the base, with five and six flowers. *Fruit-stalks* alternate. *Floral-leaves* spear-shaped, one at the base of each flower, and similar ones on the fruit-stalks. Cultivated some years in my garden. The roots received from the North of England for *H. dubium.* It approaches nearest to that species, and is, I apprehend, that plant, though somewhat varied. Woodw..

CREEPING HAWKWEED. (Irish: *Clovas Lugh.* Smith reverses the syn. and fig. Fl. Dan. as regards this and the following species. E.) Moist mountainous situations. Fairfield mountain near Rydall, Westmoreland. Hudson. (Patterdale. Rev. Mr. Richardson. Coxbench Wood, Derbyshire. Dr. Johnson. Bot. Guide. The genuine plant certainly found in Scotland. Mr. G. Don. E.) P. July—Aug.

H. AURIC'ULA. Leaves entire, spear-shaped, acute, hirsute: suckers creeping: (calyx shaggy. E.)

(*Fl. Dan.* 1111—*E. Bot.* 2368? E.)

Leaves spear-shaped, rough with small hairs. *Stalk* and *calyx* beset with black bristles. Planted in a garden it rose the next year to three feet high, with flowers in a kind of umbel on long fruit-stalks. Linn. *Root* as if bitten off, with numerous simple fibres. *Suckers* leafy. *Stalk* upright, scarcely six inches high, somewhat hairy, hairs scattered. *Leaves* mostly very entire, pointed, naked. *Flowers* in a panicle, three to six, yellow. Huds. (A plant little understood. E.)

NARROW-LEAVED HAWKWEED. On mountains. On Dalehead, not far from Grasmere, Westmoreland. Hudson. P. July.

(**H. AURANTI'ACUM.** Leaves elliptical, entire: stem almost naked, simple, hairy, bearing a corymbus of many flowers: calyx shaggy.

Jacq. Austr. 410—*E. Bot.* 1469—*Kniph.* 11—*Col. Ecphr.* 2, *t.* 30.

Root creeping, and throwing out many scions. *Stem* a foot high or more, erect, cylindrical, very hairy, scarcely bearing one or two small leaves. *Blossom* deep-brownish orange colour. *Calyx* and *flower-stalks* clothed with long hairs, like those on the leaves or stem. *Leaves* nearly all radical, elliptical, broad, entire, hairy, especially on the rib. *Receptacle* naked. *Seed-down* rough. *Stalk* and *calyx* invested with black glandular hairs. E. Bot.

ORANGE HAWKWEED. Not uncommon in gardens; and found truly wild in several woods in Bamffshire, and at Craigston near Turref, by Mr. George Don. Coalston woods, East Lothian. Mr. Maughan. Hook. Scot. At Failsworth, four miles from Manchester. Mr. John Bradbury. Eng. Fl. P. July. E.)

(3) *Stem leafy; Down sessile.*

H. SABAU'DUM. Stem upright, many-flowered: leaves egg-spear-shaped, toothed, semi-amplexicaul, (rough underneath. E.)

Allion. 27. 2—(*E. Bot.* 349. E.)—*Fl. Dan.* 872—*Pet.* 13. 7—*Gmel.* ii. 14. 2—*J. B.* ii. 1030. 3—*H. Ox.* vii. 5. 59.

Stem (dying down in winter; E.) sometimes branched from half or two-thirds of the way up; the uppermost branches often springing from one point as an umbel; those below alternate. In branches where the top of the stem has been bitten off the leaves often assume the figure of those of *H. umbellatum;* the fruit-stalks become congregated, as in Gmel. ii. 14. 1, and Fl. Dan. 872. See also var. 4. St. *Flowers* numerous, yellow, open only a few hours. (*Stem* stiff and upright, three feet high, cylindrical, furrowed, rough, scarcely hollow, but spongy within, terminating in a branched, many flowered, hairy panicle. *Calyx* brownish green, hairy, the lower scales loose. *Seeds* angular, chesnut-coloured, rather rough. Fl. Brit. E.)

SHRUBBY HAWKWEED. (Welsh: *Heboglys llydanddail.* E.) Woods and hedges. P. Aug.—(Sept. E.)

Var. 2. Leaves covered with a short and just perceptible down. Ray.

Gmel. ii. 14. 1—*Pet.* 13. 9.

Moist shady woods. Hudson. Near Ulswater, Westmoreland. Ray.

Var. 3. Leaves longer, with fewer teeth, one flower only on the stem.

Pluk. 37. 3—*Pet.* 11. 6.

On a dry bank at the edge of a wood in a lane leading from Hornhill to Rickmansworth, Hertfordshire. Ray.

Var. 4. Leaves broad spear-shaped, on very short leaf-stalks. St.

Pet. 13. 8.

Perry Wood, near Worcester. Stokes.

(H. DENTICULA'TUM. Stem erect, leafy, many-flowered, solid, cymose, with downy glandular stalks: leaves elliptic-lanceolate, finely toothed, smoothish, glaucous beneath.

E. Bot. 2122.

Stem a yard high, roughish, pithy, leafy from top to bottom. *Leaves* twice the size of the preceding, scarcely at all clasping. *Flowers* yellow, not an inch broad. *Cal.* a little viscid. *Recept.* cellular. Sm.

SMALL-TOOTHED HAWKWEED. *H. denticulatum.* E. Bot. *H. prenanthoides.* Fl. Brit. Loch Rannoch, Perthshire; and among bushes on the banks of the Earn. Mr. G. Don. Banks of Clyde at Daldowie. Hopkirk. Hook. Scot. P. July—Aug. E.)

H. PRENANTHOI'DES. Stem upright, solid: panicle terminal: leaves spear-shaped, embracing the stem, glaucous beneath.

(*E. Bot.* 2235. E.)—*Allion.* 27. 1 *and* 3.

Whole *plant* more or less hairy, (three feet high. E.) *Leaves* fringed with hairs, edged with a few minute distant teeth; dark green above, glaucous underneath, (numerous, alternate. E.) *Flowers* numerous, bright yellow, forming a panicle. (*Seeds* very smooth, brown. *Peduncles* downy. The glaucous green of the leaves is alone sufficient to distinguish this from all our other species. (Differs from *H. denticulatum.* E. Bot. 2122, with which it was confounded in Fl. Brit. in having the leaves embrace the stem by their rounded dilated base, and in their singular roughness near the edge, which there forms a bristly border. E. Bot. E.)

(ROUGH-BORDERED HAWKWEED. *H. spicatum.* Allion. Pedem. i. p. 208. Dicks.; but no trivial name could be more improper as applied to a plant with a large spreading panicle. *H. prenanthoides.* Villars. Willd. With. Sm. Hook. Sym. Hull. E.) Found by Mr. Dickson in woods in the south of Scotland. Linn. Tr. ii. 288. (Near Pitmain. Mr. J. Mackay. Banks of the Esk near Forfar. Mr. G. Don. Near Cramond Bridge. Mr. Neill, in Grev. Edin. Willington Ballast Hills, Durham. Mr. Winch, in Bot. Guide. E.) P. June—Aug.

(H. LAWSON'I. Stem branched, solid, few-leaved: leaves elliptic-lanceolate, decurrent, glaucous, fringed, nearly entire.

E. Bot. 2083—*Villars. Dauph.* v. 3, *t.* 29—*Dill. Elth.* 149.

Root black externally. *Herb* glaucous, abounding in bitter milk. *Stems* pithy, a foot high, or more, smooth, bearing one, two, or three *leaves*. *Flowers* very large and handsome, lemon-coloured; *calyx* hairy. *Leaves* chiefly radical, on long dilated *foot-stalks,* copiously hairy at the base. Sm.

Glaucous Hairy Hawkweed. *H. Lawsoni.* Vill. Willd. Sm. Upon rocks by the rivulet between Shap and Anna well, Westmoreland. Mr. Lawson. On rocks by the Maze Beck, and at Maze Beck Scar, Westmoreland. Mr. W. Robertson, in Eng. Fl. On the sloping side of a hill called Gordil, near Malham, in Craven. Dr. Richardson. Foot of Ben Cruachan. Prof. Hooker. Rocks at Dunkeld. Mr. Winch.
P. July. E.)

H. PALUDO'SUM. Stem (angular, tubular, E.) panicled: leaves amplexicaul, toothed, smooth: calyx hispid.

(*E. Bot.* 1094. E.)—*Allion.* 28. 2 *and* 31. 2—*Fl. Dan.* 928—*Ger.* 236—*Ger. Em.* 300—*J. B.* ii. 1033. 1—*J. B.* ii. 1026. 3—*H. Ox.* vii. 5. 47.

Stem one to two feet high, hollow, in which it differs from *H. murorum;* furrowed, smooth, generally bright purple at the base. *Leaves* smooth, alternate, the lower on leaf-stalks, oval-spear-shaped; the upper spear-shaped, deeply toothed towards the base, entire at the summit; the uppermost very entire. *Leaf-stalks* and midribs of the leaves sometimes purple, especially underneath. *Fruit-stalks* smooth. *Flowers* solitary, smaller than in *H. murorum. Calyx* scales strap-spear-shaped, with numerous black hairs on the back. Woodw. *Leaves* notched like those of Dandelion but not so deeply. *Flowers* bright yellow.

Marsh Succory-leaved Hawkweed. Moist meadows, woods, and sides of rivulets in the mountainous parts of Craven, Yorkshire, and both in the Lowlands and Highlands of Scotland. Hardrow Force, in Wensley Dale, Yorkshire. Mr. Wood. On the west side of the river just below the bridge at Kirkby Lonsdale, Westmoreland. Sir J. E. Smith. Near Rydal, Westmoreland. Mr. Woodward. At the Hermitage, near Taymouth. Dr. Stokes. Marshy ground at the foot of Pentland Hills. Dr. Hope. (Near Barnard Castle, Durham. Rev. J. Harriman. And Castle Eden Dean. Mr. Winch. E.) P. July.

(H. MACULA'TUM. Stem branched, tubular, many-leaved, cymose: leaves egg-spear-shaped, strongly toothed: teeth pointing forward.

E. Bot. 2121—*Fl. Dan.* 1113.

Taller, and more leafy than *H. murorum,* or *sylvaticum.* Has rather elliptical than heart-shaped leaves, whose strong deep teeth point forward, and are by no means radiated. *Leaves* strongly speckled with black. From *H. sylvaticum* it is also distinguished by the cymose, not panicled, growth of its stem; the *flowers* are also larger, more numerous, with a darker, thicker *calyx,* and the whole herbage of a darker green. *Stem* decidedly hollow. E. Bot. (This, according to Smith, "very distinct species," is considered by Prof. Hooker as var. *sylvaticum.* E.)

Stained-leaved Hawkweed. *H. sylvaticum.* Oed. Sm. Linn. tr. vol. ix. 240. *β. H. murorum γ.* Fl. Brit. This plant was brought from Westmoreland in 1781, by Mr. Crowe, from whose garden it has established itself, by seed, in the neighbourhood of Norwich, preserving its original habit and characters. The late Mr. Teesdale also found it growing wild in Yorkshire, and designated it as a new species by the name it now bears. Rocky woods in the North Riding. Mr. Teesdale. On Breidden hill, Montgomeryshire. Mr. Bowman. (Rocks by Gordale Scar, Yorkshire, Mr. Dawson Turner, in Bot. Guide. Fir wood east of Forfar. Mr. G. Don, in Hook. Scot. E.) P. July—Sept. E.)

H. **MURO'RUM.** (Stem branched, panicled, with a single leaf: root-leaves ovate-heart-shaped, toothed, wavy. E.)

(*E. Bot.* 2082. E.)—*Barr. Ic.* 342—*Tabern.* 504. 2—*J. B.* ii. 1034. 1—*Ger. Em.* 304. 1—*H. Ox.* vii. 5. 54—*Pet.* 13. 2 *and* 3—*Trag.* 276—*Munt.* 233—*Pet.* 11. 4.

(*Stem* eight to twenty inches high, scabrous and shortly pubescent, slightly branched upwards in a corymbose manner, and bearing mostly a single petiolate leaf, but when there are two, the upper one is usually sessile. *Leaves* more or less ovate, petiolate, subentire or toothed, the teeth spreading, hairy or subglabrous, often purplish beneath. *Flowers* rather large, deep yellow, on rather divaricate branches. *Involucre* (calyx), rough, with black bristly glands intermixed with a short pubescence, very different from *H. Lawsoni.* Grev. E.)

FRENCH LUNGWORT. GOLDEN LUNGWORT, or (WALL HAWKWEED. Welsh: *Heboglys y Muriau.* E.) Woods, old walls, shady banks, and balks of corn-fields. Bolton Abbey, Craven, Yorkshire. Castle Dinas Brân. Mr. Wood. Arthur's Seat, Edinburgh. Dr. Stokes. Conzic Scar, near Kendal. Mr. Woodward. (Cheddar Cliffs, Somersetshire. Mr. E. Forster, in E. Bot. On old walls about Shaftesbury; cliffs of Purbeck. Pulteney. Wood between Longridge and Shepscombe, near Painswick. Mr. O. Roberts: or may not this latter station, as also that of Cheddar Cliffs, belong to *H. sylvaticum,* it being extremely difficult even on the examination of many supposed specimens of each, to indicate invariable specific characteristics? At Hilton, Ryhope, and Castle Eden Dean, Durham. About the Lakes of Cumberland and Westmoreland. Mr. Winch. In Anglesey. Welsh Bot. On the High Tor rocks, Dartmoor. Rev. J. Pike Jones. E.) P. July.

(Var. δ. Fl. Brit. is said to have been discovered on Ben Gloe, and other mountains of Scotland, by Mr. J. Mackay, who described it with leaves toothed and snipped, not spotted; stems only a span high, hairy, nearly naked; blossoms double the size of those of other varieties; calyx covered with soft hairs, of a black colour. Very nearly allied to this must be considered *H. pulmonarioides* of Villars, *H. pulmonarium* of

E. Bot. 2307.

Stem branched, cymose, with few leaves, solid: *leaves* spear-shaped, deeply toothed, the teeth pointing forward. *Radical-leaves* numerous, rather clouded with purplish-brown than spotted, narrower than those of *H. maculatum*; *flowers* also fewer and larger, and *stem* not half so tall as in that species.

Gathered by Mr. W. Borrer on the banks of the Scottish river Nevis, near the bridge: also on Gorsdale Scar, Yorkshire. Mr. Winch. July. P. E.)

(Mr. Dawson Turner suspects a new species, most resembling *H. murorum,* will be found on the walls of Castleton Castle, Derbyshire. E.)

(H. CERINTHOI'DES. Stem solid, bearing a corymb, with leaves hairy, slightly toothed: stem-leaves oblong, semi-amplexicaul: root-leaves inversely egg-shaped: leaf-stalks bearded with long hairs.

E. Bot. 2378—*Gouan. Ill. t.* 22, *f.* 4—*Villars Dauph.* v. 3, *t.* 32.

Herb rather glaucous, one to one foot and a half high; stem nearly smooth, stout, slightly angular. *Flowers* rather large, pale yellow, on bristly stalks. *Cal.* covered with shaggy, but short, hairs. *Radical-leaves* besprinkled, though often slightly, with dots, a little like those of *Cerinthe.* Sm.

HONEYWORT-LEAVED HAWKWEED. Near the head of Clova, &c. Another discovery of Mr. G. Don, who states it to be by no means a scarce plant in the Highlands of Scotland, growing upon rocks. P. Aug. E.)

(H. AMPLEXICAU'LE. Glanduloso-pilose: stem corymbose: leaves toothed; radical ones oblongo-ovate, petiolate; cauline ones cordate at the base, amplexicaul.

Has many points in common with the last species, but is every where covered with brownish glandular hairs, most thickly on the peduncles and involucre. Lower cauline leaves more or less oblong; upper ones truly cordate.

AMPLEXICAUL HAWKWEED. Walls the castle of Cleish, Kinross-shire. Mr. Arnott. Clova mountains. Mr. G. Don. Hook. Scot. Said likewise to have become naturalized on the walls of Magdalen College, Oxford. Purt. Mid. Fl. P. Aug. E.)

H. SYLVAT'ICUM. (Stem solid, many-leaved, simply racemose: leaves egg-spear-shaped, toothed chiefly about the base; teeth pointing forward. Sm. E.)

(*E. Bot.* 2031. E.)—*Allion.* 28. 1—*Lob. Obs.* 517. 2, *and Ic.* i. 517. 1—*Ger. Em.* 304. 2—*Park.* 801. 2—*Tabern.* 505. 1—*J B.* ii. 1034. 3.

(*Flowers* bright yellow, smaller than those of *H. maculatum*, and much fewer, often but two or three in the panicle. Sm. E.)

(WOOD HAWKWEED. Welsh: *Heboglys y goedwig.* E.) *H. murorum a.* Fl. Brit. *H. sylvaticum a.* Hook. *H. sylvaticum.* With. Sm. Grev. Chalky woods, or old park walls. E.) Old Roman Camp at Sidmonton, near Newberry. On the side of the lake Llyn y Cwn. Ray. (Epping Forest, near Highbeach. Mr. E. Forster. Coal-pit heaps, near Gateshead, and on the town walls of Newcastle. Mr. Winch. Walls in Warwick. Perry. Arthur's Seat, and Braid Hill. Dr. Graham. Grev. Edin. E.) On Dudley Castle Hill, Staffordshire. P. Aug.

H. VILLO'SUM. Stem tubular, branched: leaves rough with hair: root-leaves egg-shaped, toothed: stem-leaves heart-shaped, amplexicaul.

Jacq. Austr. 87—*Clus.* 141—*J. B.* ii. 1027—*H. Ox.* vii. 5. 58—(*E. Bot.* 2379.

Root-leaves very variable in size, the smaller ones on very long leaf-stalks. *Stem-leaves* sometimes strap-shaped, and not embracing the stem. The whole *plant* woolly, and when cultivated rising to the height of four feet.

(The copious long shaggy hairs of the *stem*, *leaves*, and *calyx*; and lemon-coloured *flowers*, nearly two inches over, distinguish this species. Sm. E.)

(SHAGGY ALPINE HAWKWEED. E.) Found by Mr. Dickson amongst wet rocks on Ben Nevis, Scotland. Linn. Tr. vol. ii. 286. On rocks near Loch Callater, north of Clova. Mr. T. Drummond. Eng. Fl. Clefts of Rocks near Meer Gill, at the foot of Ingleborough, Yorkshire. Mr. Caley, (who since conjectures his plant may prove a new species, unless it be *H. alpinum*. E.) P. Aug.

(*H. Halleri*, thus characterised: "Stem erect, with one or two flowers, slightly leafy; leaves hairy; lower ones obovate-oblong, stalked, toothed; upper lanceolate, much diminished; calyx shaggy." Considered by Smith as decidedly distinct both from *H. villosum* and *alpinum*, for which latter it has sometimes been mistaken; but it appears to be a somewhat taller plant; with the calyx, according to Hooker, having "long silky hairs, principally near the margins of the scales,"—"by no means shaggy like *H. alpinum*—with a flower of a full golden yellow, not lemon-coloured like *H. villosum*;" Sm., is said to have been found by Mr. G. Don on Clova mountains, in the Highlands of Scotland.—In a recent number of that most accurate, elegant, and, as far as merit can establish such a title, truly national work, the *Flora Londinensis*, Professor Hooker gives a representation of *H. Halleri*, (t. 215,) but considerable discrepancy may still be detected in the different accounts of this plant. The above learned author remarks, "This, however, like all the other species of the genus, is liable to much variety in the size of the plant and especially in the breadth and toothing of the leaves;" and, in allusion to *H. Lawsoni*, *murorum*, *villosum*, and *alpinum*, admits that he "can find no limits to any of the characters." E.)

H. MOL'LE. Leaves soft, spear-shaped, nearly entire, (semi-amplexicaul: E.) lower ones on leaf-stalks: flowers on fruit-stalks nearly forming a corymb.

Dicks. H. S.—*Jacq. Austr.* 119—(*E. Bot.* 2210. E.)

Stem upright, unbranched, one or two feet high, scored, purplish, leafy, somewhat hairy. *Fruit-stalks* terminal, few, one or two-flowered, one inch and a half long. *Leaves* oval, blunt, hairy on both sides, soft, the upper sitting, the lower tapering into leaf-stalks. *Calyx* not tiled. *Leafits* dark green, hairy, uniform. *Flowers* deep yellow. *Seeds* reddish, scored. It approaches *H. murorum*, and sometimes grows along with it, but it differs in the colour of the flowers, the number of leaves on the stem, and is truly distinct. Jacq. (Remarkable for obtuse radical *leaves*, which taper gradually into a long foot-stalk. *Scales* of the *involucre* (calyx) with a few black glandular hairs. Hook. E.)

(SOFT-LEAVED HAWKWEED. *H. molle*. Jacq. Willd. Sm. Hook. Found by Mr. Dickson in the south of Scotland. Linn. Tr. vol. ii. 286. Lower fall of the Tummel, Glen Luss. Mr. Borrer. Hook. Scot. E.) P. July—Aug.

H. UMBELLA'TUM. (Stem erect, somewhat umbellate, nearly solid: leaves strap-shaped, somewhat toothed, scattered: but slightly hairy. E.)

Curt.—*Kniph.* 9—(*E. Bot.* 1771. E.)—*Pet.* 13. 10 *and* 11—*Clus.* ii. 140—*Dod.* 638. 2—*Lob. Obs.* 120. 3, *and Ic.* i. 240. 1—*Ger. Em.* 298. 5—*Park.* 801. 4—*J. B.* ii. 1030. 1—*Fl. Dan.* 680—*Ger.* 234. 6.

Stem two to four feet high, simple, cylindrical, scored, hollow, (pithy with a small cavity in the centre, Sm. E.) nearly smooth. *Leaves* numerous, without order, decreasing in size upwards, sessile, strap-spear-shaped, with a few pointed teeth towards the base, edges and ribs slightly hairy. *Flowers* large, yellow. *Fruit-stalks* branched, cottony. *Floral-leaves* awl-shaped. *Calyx* scales strap-spear-shaped, the outer somewhat cottony, the inner smooth. *Seeds* cylindrical, smooth, furrowed. *Down* as long as the calyx. Woodw.

NARROW-LEAVED HAWKWEED. (Welsh: *Heboglys culddail.* E.) Hedges and dry shady places. Ditchingham, Norfolk. Mr. Woodward. Ditch banks near Birmingham. Stokes. (Woody hills at the back of Thorpe, near Norwich. E. Bot. Sea coast at Rooker's Gill, near Monk Wearmouth, Durham. Winch Guide.' Dartmouth Castle. Rev. J. Pike Jones. On the walls of Warwick Castle; and at Hord's Park, Salop. Purton. On south east side of Anglesey. Welsh Bot. King's Seat, Dunkeld. Lightfoot. E.)

Var. 2. Leaves smooth, very entire, dark green; Dill. in R. Syn. truly linear.

Pet. 13. 12.

About London, but not common. Near Bungay, frequent. Mr. Woodward. P. Aug.*

CRE'PIS.† *Recept.* naked, (very slightly hispid: Fl. Brit. E.) *Calyx* double, outer one deciduous: *Down* hair-like, somewhat pedicellate.‡

C. **FŒT'IDA.** (Leaves between notched and winged, with reversed teeth, hirsute: leaf-stalks toothed: stem hairy: calyx downy. E.)

(*E. Bot.* 406. E.)—*Col. Ecphr.* 242—*Park.* 794. 3—*Dod.* 641. 3—*Lob. Obs.* 113. 1, *and Ic.* i. 226. 1—*Ger. Em.* 279—*H. Ox.* vii. 44—*Pet.* 12. 8 *and* 9—*Magn. Bot.* 129.

Unopened *flowers* nutant. *Leaves* smelling like bitter almonds. Linn. rather like opium. Relh. *Flowers* small, yellow. (*Stems* spreading, branched, leafy, cylindrical, hairy; the central one only upright, about a foot high. *Calyx* hairy or woolly. *Blossom* reddish at the back. *Receptacle* honey-combed. *Seeds* slender, yellowish, furrowed, roughish. Fl. Brit.' *Down* on a long rough stalk. *Herb* lactescent. E.)

FETID HAWK'S-BEARD. Dry meadows and pastures. About Cambridge. Ray. Banstead Downs, by the side of the road to Dorking. Charlton chalk pits, Kent. Petiver. Near Greenhithe. Barton, near Swaffham, Norfolk. Mr. Pitchford. Near the sixth mile stone from Bury to Newmarket; and Great Saxham. Sir T. G. Cullum. Willington Ballast Hills, Durham. Mr. Winch. E.) B. June—July.

C. **TECTO'RUM.** Leaves spear-shaped, notched, sessile, smooth; the lower ones (runcinate, amplexicaul. E.)

Curt. 327—(*E. Bot.* 1111. E.)—*Walc.*—*Fl. Dan.* 501—*Pet.* 12. 6—*Gmel.* ii. 6—*Lob. Ic.* i. 239—*Ger. Em.* 297. 4—*Park.* 794. 2—*H. Ox.* vii. 7. 29

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* (In Scania, the Narrow-leaved Hawkweed is said to furnish an elegant dye for woollens. E.)

† (From κρεπις, a shoe; the blossom bearing some resemblance to the form of a slipper. E.)

‡ (It has been attempted to limit the present genus to such as have the *down* of the seed *sessile*, the others being denominated *Barkhausia* and *Prenanthes*; but the down, being far from invariable in this respect, affords no positive criterion. E.)

J. B. ii. 1024. 1—*Dod.* 636. 3—*Lob. Obs.* 115. 1, *and Ic.* i. 229. 2—*Ger. Em.* 284. 2—*Park.* 777. 2—*J. B.* ii. 1024. 2—*Ger.* 228. 2.

Plant of an ash-coloured green. *Stem* angular, furrowed, (one to three feet high. E.) *Branches* as long as the stem. *Root-leaves* resembling those of *Leontodon Taraxacum; stem-leaves* those of *L. autumnale*, but with the teeth at the base upright and longer; *branch-leaves* entire, strap-shaped, somewhat arrow-shaped and rolled back at the edge. *Flowers* of the appearance of those of *Lapsana Communis*, never drooping *Calyx* furrowed, sprinkled longitudinally with clammy hairs. The plant, in most other respects, liable to great variations of structure and appearance, when growing in a rich soil as figured in Ger 228. 2, when in a poor soil more slender, about a foot high, with strap-shaped leaves somewhat toothed, resembling those of *Plantago Coronopus*, (as in Gmel. ii. 6. St.) or a hand's breadth high. Linn. *Root* very long and taper. *Stems* purplish, often twisted, smooth. *Calyx* with black or brownish white hairs, terminating in small transparent globules; *outer* leaves five to ten, not deciduous; *inner* keeled towards the bottom. *Florets* yellow on both sides. *Down* sessile, rather longer than the seeds, or the tube of the blossom.

SMOOTH SUCCORY HAWKWEED or HAWK'S-BEARD. (Welsh: *Gwalchlys llyfn.* E.) Meadows, pastures, walls, roofs, road sides. A. June—Sept.

Var. 2. Leaves tapering to a fine point.

Pet. 12. 7.

Pastures about London. July—Aug.

Var. 3. Leaves entire, toothed, either spear-shaped or egg-shaped.

Pet. 12. 7.

Pastures about London.

Sometimes the leaves are very entire, scarcely producing a single tooth.

Var. 4. Stems trailing, leaves strap-shaped, very narrow, apparently from the stem having been bitten off in the spring.

C. BIEN'NIS. Leaves notched, wing-cleft, rough, toothed above the base: calyx bristly.

E. Bot. 149—*Kniph.* 6—*J. B.* ii. 1025. 3—*C. B. Pr.* 64—*Park.* 793—*H. Ox.* vii. 4. 46—*Pet.* 12. 10.

Stem angular, rough, four to six feet high, brittle. *Leaves*, all between lyre-shaped and winged, bristly underneath, (especially on the mid-rib. E.) *Calyx* furrowed, beset lengthwise with soft prickles. *Flowers* closing early. Linn. *Leaves* at the base of the lowermost flowering branches similar to the leaves below, those at the base of the upper flowering branches strap-spear-shaped. *Flowering branches* spreading, with several flowers. *Flowers* on separate fruit-stalks. *Floral-leaves* spear-shaped. *Blossom* yellow, (large, reddish underneath. E.) *Seeds* furrowed. *Down* sessile, hair-like, extending a little beyond the calyx. Woodw.

ROUGH SUCCORY HAWKWEED or HAWK'S-BEARD. Meadows and pastures in a calcareous soil. Road from Sittingbourne to Rochester; and about Northfleet and other places in Kent and Essex. Hudson. Near Bury St. Edmund's. Mr. Mathew. Fl. Brit. (Sunderland Ballast Hills. Mr. Winch. Coast south of Sunderland. Mr. Waugh. On the Wolds, west of Bishop Burton, Yorkshire. Teesdale. On the Downs near Ewel, Surry. Mr. T. F. Forster, jun. About Boxhill, near Dorking. Mr. J. Woods, jun. Bot. Guide. E.) B. July—Aug.

(C. PUL'CHRA. Leaves downy, toothed; radical ones obovate; those on the stem somewhat arrow-shaped and amplexicaul: stem panicled, corymbose: calyx pyramidal, smooth.

E. Bot. 2325—*Col. Ecphr. t.* 249—*H. Ox.* vii. 5. 37.

Root small, taper, branching. *Stem* one to two feet high, upright, downy, slender, cylindrical, hollow. *Root-leaves* inversely egg-shaped, thin, downy, toothed most in their lower part, the rest few, small, arrow-shaped, clasping the stem with their toothed base. *Flowers* small, yellow, closing about noon. *Anthers* and *stigmas* brownish. *Scales* at the base of the calyx not deciduous. *Down* of the seed nearly sessile, very slender, minutely toothed. Like its congeners said to vary much in luxuriance. E. Bot. Vid. also Linn. Tr. vol. x. p. 345.

SMALL-FLOWERED HAWK'S-BEARD. *Hieracium pulchrum.* Bauh. Hist. *Prenanthes Hieracifolia.* Willd. *P. pulchra.* De Cand. Found wild by Mr. G. Don, in 1796, amongst crumbling rocks on the hill of Turin, near Forfar. A. June—Sept. E.)

HYPOCHÆ'RIS.* *Recept.* chaffy: *Calyx* somewhat tiled: *Down* pedicellate, feathery.

H. MACULA'TA. Stem solitary, almost naked: leaves egg-oblong, entire, toothed.

E. Bot. 225—*Fl. Dan.* 149—*Hall. Enum.* 24. 1, *at p.* 740, *and. Hist.* 1. 1, *at p.* 24—*Clus.* ii. 139. 2—*Ger.* 301. 1—*Park.* 799. 13—*J. B.* ii. 1027. 1—*H. Ox.* vii. 5. 53—*Pet.* 13. 1—*Ger.* 237. 1—*Hall.* 1. 1, *at p.* 24.

Leaves spreading on the ground in a circle, oval, toothed at the base, very entire towards the end, fringed, with reddish angular spots, and scattered hairs. *Stem* naked, with one or two strap-shaped scales. *Calyx* outer scales blackish, fringed; the inner smooth, yellowish, half as long as the florets, hairy, composed of large scales. Woodw. *Stalks* generally simple, but sometimes with one, two, or three branches. Relh. *Blossoms* yellow: (large, terminal. *Down* feathery. E.)

SPOTTED CAT'S-EAR. Mountainous meadows and pastures. Gogmagog Hills, between Triplow Heath and Foulmire; Newmarket Heath; banks of the Devil's Ditch near Reche; and Bartlow, Cambridgeshire. Relhan. Bernack Heath, Northamptonshire, (but since the time of Ray sought for there in vain, says Morton. E.) On Omperhead, by Cartmel Wells, very plentiful, with *Veronica hybrida.* Mr. Hall. (About Malham Cove, Yorkshire. Sir J. E. Smith. At the end of Risby Heath, Suffolk, on a chalky bank close to the plantation of firs. Sir T. G. Cullum, in Bot. Guide. In dry woods east of Forfar. Mr. G. Don. E.) P. July.†

H. GLA'BRA. Smooth: stem branched, nearly leafless: leaves toothed and indented: calyx oblong, tiled: (down of the marginal seed sessile. E.)

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* (From υπο and χοιρος; because swine are supposed to delight in certain species. E.)

† The leaves are boiled and eaten like cabbage. Horses are fond of this plant when green, but not when dry. Cows, goats, and swine eat it. Sheep are not fond of it. Linn. The country people believe it a cure for tetters, and other cutaneous eruptions, possibly through a vulgar prejudice, founded on its spotted leaves. Mr. Wood.

Curt. 145—(*E. Bot.* 575. E.)—*Fl. Dan.* 424—*Pet.* 12. 4—*H. Ox.* vii. 4. 35 —*Pet.* 11. 12—*Col. Ecphr.* ii. 27. 2.

Differs from *H. radicata* in having much smaller *blossoms*, the scales of the calyx smooth, and the keel not fringed. Whole *plant* smooth. *Stems* (about a foot high, E.) nearly upright, with one or two branches, slender, hollow above, solid below. *Leaves* spear-shaped, indented, toothed. *Fruit-stalks* thickening upwards. *Calyx* like that of *Leontodon autumale*. *Blossom* yellow, close. *Seeds* of the circumference with the down sessile; those of the centre, down pedicellate. *Habit* and appearance that of *Leontodon autumnale*. Linn. *Stem* sometimes simple, in the autumn much branched and reclining. *Leaves* in a circle round the root, shining; teeth triangular, Woodw. sometimes edged with white hairs. *Calyx* long, conical; scales smooth, blunt, purplish at the ends.

SMOOTH CATS'-EAR. Sandy and gravelly soils. Near Middleton, Warwickshire. Ray. Pensham Field, near Pershore. Nash. On the common, close to the Inn at Bank-top, near Barnsley. Mr. Wood. Sandy parts of Norfolk and Suffolk. Mr. Woodward. (Under Greenwich Park wall, on Blackheath. Curtis. Among turnips at Great Barton, Suffolk. Sir T. G. Cullum, in Bot. Guide. Sunderland Ballast Hills; Ryegate Common, Surry. Mr. Winch. On sandy banks about Plasteirion in Rhyl near Rhyddlan, Flintshire. Mr. Griffith. E.) Washwood Heath, near Birmingham. A. June—Aug.

H. RADICA'TA. Stem branched, naked, smooth: leaves notched, blunt, rough: fruit-stalks scaly: (down of all the seeds stalked. E.)

Curt. 152—(*E. Bot.* 831. E.)—*Fl. Dan.* 150—*Dod.* 639. 2—*Lob. Obs.* 120. 2, *and Ic.* i. 238. 1—*Ger. Em.* 298. 6—*Park.* 790—*H. Ox.* vii. 4. 27—*Ger.* 227. 7—*Park.* 791. 8—*Pet.* 11. 11—*J. B.* ii. 1032. 1.

Root-leaves spread on the ground, oblong-wedge-shaped, waved or toothed, hairy. *Branches* one or more, thickest upward, each with one flower. Woodw. *Calyx* not distended at the base; scales strap-spear-shaped, set along the upper part of the keel with a row of short, taper, dark, purple bristles. *Seeds* scored, rough; *pedicle* longer than the seed; *down* rather longer than the pedicle. *Chaff* strap-shaped, tapering and yellow towards the top. *Blossoms* large, yellow within, reddish green without. (*Root* spindle-shaped, descending to a great depth. E.)

A dwarf variety with only one flower, and that nearly sessile, lateral, has been observed by Mr. Woodward.

LONG-ROOTED CAT'S-EAR. (Welsh: *Melynydd gorwreiddiog*. E.) Meadows and pastures, common. P. May—Sept.*

LAP'SANA. *Receptacle* naked: *Calyx* double: all the inner scales channelled: *Down* none.

L. COMMU'NIS. Calyxes after flowering, angular: fruit-stalks slender, much branched: (stem bearing a panicle: leaves egg-shaped, stalked, toothed. E.)

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* (Sheep and cows refuse it. Sinclair. This is the *Porcellia* of old authors, supposed to be a favourite food with pigs; though probably not more so than some others of the same class, as *Swine's* Succory, *Sow*-thistle, &c. E.)

Dicks. H. S.—*Curt.*—(*E. Bot.* 844. E.)—*Kniph.* 5—*Fl. Dan.* 500—*Lob. Obs.* 104. 1, *and Ic.* i. 207. 1—*Ger. Em.* 255—*Park.* 810. 1—*J. B.* ii. 1028—*Dod.* 675. 2—*H. Ox.* vii. 1. 9—*Pet.* 14. 12—*Ger.* 231. 8.

Stem two to four feet high, stiff, hollow, cylindrical, scored, hairy. *Leaves* alternate: the *lower* egg-shaped, on leaf-stalks; the *upper* spear-shaped, higher up strap-shaped, the uppermost awl-shaped. *Leaf-stalks* bordered, the border wing-cleft, one or two pair of wings, slightly hairy. *Flowering branches* long, naked, or with one or two awl-shaped scales, much branched at the top, each branch with one flower. Woodw. *Stem* nearly cylindrical, scored, hairy; the hairs terminated by minute globules. *Branches* smooth. *Leaves* toothed; rough with hair, the lower egg-shaped, on long leaf-stalks, the upper spear-shaped, sessile. *Leaf-stalks* flat, with two or three pair of small unequal wings. *Calyx* somewhat cylindrical; the *outer*, scales spear-shaped, closely embracing the base of the inner. *Blossom* yellow; *florets* fifteen to eighteen. *Styles* purplish. *Summit* dark purplish green.

COMMON NIPPLE-WORT. DOCK CRESS. (Irish: *Duilleog brideog.* Welsh: *Cartheig cyffredin.* E.) Hedges, shady places, and on rubbish.
A. June—July.*

(L. PUSIL'LA. Stalks radical, subdivided, naked, thickening upwards: leaves obovate, rough-edged, toothed. E.)

(*Hook. Fl. Lond.* 65. E.)—*E. Bot.* 95—*Fl. Dan.* 201—*Clus.* ii. 142. 2—*Ger. Em.* 288. 8—*Park.* 791. 9—*Pet.* 15. 9—*Gies.* 33—*Ger.* 227. 8—*H. Ox.* vii. 1. 8.

Root small, woody, with a few stiff fibres. *Leaves* spreading in a circle, bluntly oval, tapering into a leaf-stalk, toothed on the sides, entire at the base and end, viewed with a glass slightly hairy, particularly at the edges. *Stalk* six to nine inches high, cylindrical, smooth, reddish and stiff at the bottom, green and hollow upwards, sometimes simple, oftener with one, sometimes two branches. *Branches* reddish and wire-like at the base, hollow and thickening upwards, sometimes again divided. *Flowers* pendant before opening, afterwards upright. *Calyx outer scales* small, dry, and shrivelling; the *inner* very pointed. *Blossom* yellow. *Seeds* oval, scored, crowned with the proper calyx. Woodw. In some situations much larger, the branches dividing and sub-dividing. Br.

(DWARF NIPPLE-WORT. E.) SWINE'S SUCCORY. (*L. pusilla.* Willd. Ait. Hook. *Hyoseris minima.* Linn. originating in an error, as explained by Smith. *L minima.* Lightf. Hook. Scot. E.) Meadows and corn-fields in gravelly soil. Corn-fields, at Walthamstow, Essex. Sir W. Watson. Teddington Field, near Hampton. Doody. Pensham Field, near Pershore, in the most barren and gravelly places. Nash. Corn-fields, near Norwich. Woodward. Sandy corn-fields about Forfar; road from Dundee to St. Andrews. Mr. Brown. (In Damary and Langton corn-fields, and about Spetisbury, Dorset. Pulteney. E.) A. May—Aug.

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* As a curative for sore breasts, (whence the old English name is derived), it is now entirely in disuse. At Constantinople it is eaten raw, just before flowering. (In some parts of England the young leaves are boiled and used as greens, but have a disagreeable flavour. "*Lapsanâ* vivere" is proverbial, signifying to live hard; in allusion to Cæsar's army, which is reported to have sustained life for some time at Dyrrhachium by using the roots of this herb; but our plant being annual, and its roots little more than fibrous, we apprehend the passage of Pliny, xix. 9, must refer to some other vegetable. E.)

CICHO'RIUM.* *Receptacle* somewhat chaffy: *Calyx* double: *Down* chaffy, (shorter than the seeds. E.)

C. IN'TYBUS. Flowers in pairs, sessile; leaves notched.

E. Bot. 539. E.)—*Fl. Dan.* 907—*Woodv.* 248—*Curt.* 241—*Blackw.* 177—*Walc.*—*Dod.* 635—*Lob. Obs.* 114. 1, *and Ic.* i. 228. 2—*Ger. Em.* 284. 1—*Park.* 776. 2—*H. Ox.* vii. 1, *row* 2. 2—*Fuchs.* 679—*J. B.* ii. 1008—*Trag.* 272—*Lonic.* i. 94. 1—*Ger.* 235. 10—*Matth.* 503.

Stem angular, (two to three feet high, upright, straight. *Root* spindle-shaped, fleshy, white. E.) *Stem-leaves* spear-shaped, amplexicaul, toothed towards the base, fringed with bristly hairs terminating in globules. *Flowers* axillary to the upper leaves, only open during the middle of the day. *Calyx, outer,* scales six, reflexed, about half as long as those of the inner, set on the outside and edges with whitish hairs bearing small globules; *inner,* scales membranous, set along the back with similar hairs, woolly at the ends. *Blossom* of a fine blue, (sometimes white, E.); *individuals* with five or six semi-transparent lines, a little woolly on the outside. *Cylinder* of anthers striped blue and white. *Germen,* edge with little teeth. *Summits* blue. *Seeds* oblong, quadrangular, crowned with a small greenish cup edged with numerous white teeth. *Chaff* short, spear-shaped.

WILD SUCCORY, (CICHORY, E.) or ENDIVE. (Welsh: *Ysgallen y meirch.* E.) Borders of corn-fields. P. July—Aug.†

ARCTIUM.‡ *Calyx* globose: scales with hooked points, bent inwards.

A. LAP'PA. Leaves heart-shaped, without thorns, on leaf-stalks.

(*E. Bot.* 1228. E.)—*Kniph.* 3—*Ludw.* 106—*Curt.* 238—*Woodv.* 15—*Matth.* 1154—*Lob. Obs.* 318. 2, *and Ic.* i. 588. 1—*Ger.* 664. 1—*Park.* 1223. 1—*Dod.* 38—*Lob. Obs.* 318. 1, *and Ic.* i. 587. 2—*Ger. Em.* 809. 1—*Pet.* 23. 1—*Fuchs.* 72—*J. B.* iii. 570—*Trag.* 837—*Blackw.* 117. 1—*H. Ox.* vii. 32. 1—*Lonic.* i. 64. 2.

Leaves, the lower on long leaf-stalks, waved at the edges; the upper egg-spear-shaped. Woodw. *Stems* reddish. *Stems* and *leaves* with short white soft bristles. *Fruit-stalks* axillary. *Calyx scales* green and fleshy at the base, purple towards the top, keeled, ending in long stiff awns, yellow at the hooked points. *Blossom,* tube white; bordered. *Anthers* bluish purple. *Style* white. *Summits* expanding, white. *Seeds* oblong, angular, somewhat flatted. (*Stem* nearly four feet high, upright, with wide-spreading branches, leafy, cylindrical, furrowed, slightly hairy. Fl. Brit. *Leaves* larger than those of any other British plant, unless Butterbur. E.)

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* (Pliny traces this name to an Egyptian origin. By the Greeks it was sometimes written κικορειον, whence among the simple fare of Horace,

——— "Me pascunt olivæ,
Me *Cichorea*, levesque Malvæ." E.)

† The leaves, when blanched, are eaten early in the spring in salads. They lose their bitterness by cultivation, (but the kind more generally adopted for horticultural purposes is *C. Endivia*, an exotic, and little more than annual, species. E.) The roots, gathered before the stem shoots up, are eatable, and, when dried, will make bread. Sheep, goats, and swine eat it. Cows and horses refuse it. (The root dried and ground to powder will improve coffee, and is frequently drunk therewith, especially in Germany, where it is prepared in cakes, and sold for that purpose.—In Moscow, and generally throughout Russia, it is used, when roasted, as a substitute for tea and coffee.—The cultivated variety, when sown in drills, is productive, but the stems being hard, render it unfit for provender. Indeed, agriculturally considered, it is, like several other beautiful plants, little better than a troublesome weed. Medicinally, it has been admitted into the Dispensatory as an aperient, detergent, and attenuant, but probably with no very active virtues. B.)

‡ (From αρκτος, a bear; from the roughness of its globular heads.—Respecting the etymon of the old generic term *Lappa*, Ray observes, "Dici potest vel ἀπὸ τȣ̃ λαβεῖν, prehendere; vel ἀπὸ τȣ̃ λαπτειν, i. e. lambere; quod prætereuntium vestibus adhæreat." E.)

COMMON BURDOCK or BURR. (Irish: *Meacan tovach.* Welsh: *Cedowrach; Cribau'r bleiddiau.* Gaelic: *Mac-andog-ha; Suircean suirich.* E.) Road sides, rubbish, and ditch banks. B. July—Aug.*

Var. 2. Heads roundish, rather large, brownish, purple, interwoven with whitish cotton. Blossom purple. Stem dark red. Ray.

(*E. Bot.* 2478. E.)—*Mill. Ic.* 159—*Blackw.* 117. 2—*Fl. Dan.* 642—*Pet.* 23. 5—*Matth.* 11. 155—*H. Ox.* vii. 32. 2.

(*A. Lappa* β, Linn. var. Huds. Curt. Hook. Grev. *A. Bardana.* Willd. Sm. E.)

Road sides and rubbish.

Var. 3. Heads quite smooth, very large, an inch in diameter, green. Blossom purplish.

New Cross, Kent. Ray.

Var. 4. Heads small, smooth, of the size of a hazel nut, broadish at the base, brown. Blossom purple. Ray.

Pet. 23. 3.

Var. 5. Heads the size and colour of those of var. 4, rounder, brown or purplish, and with a considerable quantity of cotton. Ray.

Pet. 23. 4—*J. B.* iii. 571. 1.

Near Halifax, Yorkshire. Ray.

Var. 6. With leafy heads. Pluk.

Pet. 23. 2.

About London. Aug. Pet. Dill.

(In reference to the above varieties Prof. Hooker observes: "We have little hesitation in pronouncing them to be variations of the same species, having remarked, in a small compass of ground, some plants which had the calyx quite smooth; some thickly covered with cobweb-like filaments, and others in all the intermediate states." E.)

SERRATULA.† *Calyx* nearly cylindrical, tiled: scales not spinous: (*Down* permanent. E.)

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* Before the flowers appear, the stems, stripped of their rind, may be boiled and eaten like asparagus. When raw they are palatable with oil and vinegar. A decoction of the roots is esteemed by some very sensible physicians equal, if not superior, to that of sarsaparilla, in rheumatic affections. (The seeds are recommended as diuretic: and are acceptable to birds. E.) Boys catch bats, by throwing the prickly heads into the air. These hooked points tend to the dispersion of the seed, by adhering to the coats of animals, &c. E.) Cows and goats eat it. Sheep and horses refuse it. Swine are not fond of it. *Phalæna Humuli* feeds upon the roots, and the Mottled Orange Moth upon the stems: Linn. (within which the chrysalis may be found about the month of August, especially in stunted specimens. E.)

† (Diminutive of *serra,* a saw; from its serrated foliage. E.)

S. **tincto'ria.** Leaves (serrated, E.) lyre-shaped and wing-cleft; the terminal segment very large: florets all alike: (seed-down rather bristly. E.)

Fl. Dan. 281—*E. Bot.* 38—*Ger.* 577. 3—*Matth.* 945. 1—*Clus.* ii. 8. 1—*Dod.* 42. 3—*Lob. Obs.* 288. 2, *and Ic.* i. 534—*Ger. Em.* 713. 1—*Pet.* 22. 6—*J. B.* ii. 23. 2—*Park.* 475. *a.*

(*Herb* rigid, smooth and shining. Sm. E) *Stem* two to three feet high, firm, four-cornered, scored, smooth. *Leaves* sometimes entire, mostly wing-cleft, alternate, half embracing the stem; wings spear-shaped, sharply serrated, or rather toothed, woolly above, and at the edges and veins underneath. *Flowers* purple, single or in clusters, terminal, or on the branches. *Calyx* scales numerous (slightly coloured, E.) cottony at the edges, the upper rather longer. *Down* yellowish, shining, hairy. Woodw. (The flowers of this plant, (as of some species of *Carduus*, not usually considered so,) are proved to be dioecious. See Linn. Tr. xii. 123. xiii. 593. E.)

Common Saw-wort. (Welsh: *Dant y pysgodyn.* E.) Woods, pastures. (Rare in the north. On the coast of Durham, near Whitburn; and near Hilton Ferry. Mr. Winch. Banks of the Clyde, between Daldowie and Bothwell. Hopkirk. E.) P. July—(Aug. E.)*

Var. 2. Blossoms white.

Alconbury, five miles from Huntingdon, on the north road. Mr. Woodward. (In a small wood near Dulwich, (Aug. 1827), in abundance. Mag. Nat. Hist. i. 83. E.)

Var. 3. All the leaves entire. Mr. Wood.

Kniph. 2—*Ger.* 576. 1—*Matth.* 945. 2—*Clus.* ii. 8. 1—*Dod.* 42. 3—*Lob. Obs.* 288. 2, *and Ic.* 534. 1—*Ger. Em.* 713. 1—*Pet.* 22. 5—*Park.* 475.

Var. 4. Lower leaves entire, the upper cut. Hall.

Ger. 576. 2.

Var. 5. All the leaves jagged, Hall; wing-cleft, without the large terminal segment. Wings spear-shaped, serrated.

Zanon. 94.

S. **albi'na.** Calyx somewhat hairy, egg-shaped; leaves undivided, (cottony beneath: seed-down feathery. E.)

(*E. Bot.* 599. E)—*Lightf.* 19, *at p.* 449—*Pluk.* 154. 3—*Gmel.* ii. 26.

Root-leaves egg-spear-shaped, serrated, the serratures not ending in bristles but expanding, smooth above, woolly and whitish underneath. *Stem-leaves* seven to ten, spear-shaped, very entire, nearly sessile. *Stem* undivided, a span high. *Flowers* eight to twelve, in a broad-topped terminal spike. *Calyx* oblong, nearly cylindrical. Linn. About five inches high. *Stem* cottony. *Leaves* six or seven; cottony underneath. *Flowers* about six; blue. *Down* stiff and strong, plumose.

(Alpine Saw-wort. E.) On the highest rock of Snowdon; and on Brearcliff, near Burnley, Lancashire. Merrett. Sides of Highland Mountains, and near Moffat, Anandale. Lightfoot. On the highest rocks of Carnarvonshire, as Clogwyn y Garnedd ; on Crib y Ddeseil, in places scarcely accessible. Mr. Griffith. (Castle, and near the Church at Bewcastle, Cumberland. Hutchinson. On Ben Lawers and Lomond, and on the west side of Helvellyn. Mr. Winch. E.) P. Aug.—Sept.

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* This plant is used by the dyers to give a yellow colour, fixed with alum; but is inferior to the *Reseda*, therefore confined to the coarser woollen cloths. (With blue it is said to afford a valuable green. E.) Goats eat it. Horses are not fond of it. Sheep, swine, and cows refuse it.

Var. 2. *Cynoglossifolia.* Leaves spear-shaped, narrow. Hall. Lightf.

Fl. Dan. 37—*Dill. Elth.* 70—*Gmel.* ii. 32.

Near a rivulet on the rock Rhiw'r Glyder above the lake Llyn y Cwn near Llanberis, Carnarvonshire. Ray.

CAR'DUUS.* *Calyx* tumid, tiled ; scales spinous : *Receptacle* hairy : *Down* deciduous, capillary or feathery.

(1) *Leaves decurrent.*

C. PALUS'TRIS. Leaves toothed, spinous at the edge : flowers in bunches, upright ; fruit-stalks without thorns : (down feathery. E.)

(*E. Bot.* 974. E.)—*Gmel.* ii. 23. 2—*H. Ox.* vii. 32. 13—*Pet.* 21. 4.

Stem five to six feet high and upwards, upper part and branches slender and with few leaves. *Calyx*, scales woolly, green, tipped with deep purple, without a rib along the back, ending in a short expanding, not pungent, thorn ; inner pointed, without thorns. *Blossom* segments even with the anthers, shorter than the pistil. *Down* shorter than the blossom ; rays fringed with long hairs, Woodw., (feathery. E.) *Blossom* purple ; sometimes white.

(MARSH THISTLE. Welsh : *Ysgallen y gors.* *C. palustris.* Linn. *Cnicus palustris.* Willd. Hook. Sm. Grev. E.) Marshy meadows, moist shady places, and wet clayey pastures. B. July.†

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* (Supposed to be derived from κειρω, a technical verb denoting the operation of carding wool ; to which process the heads of some species are applicable E.)

† This and almost all the other species may be eaten like the Burdock, before the flowers are formed Swine eat it ; horses are very fond of it ; cows refuse it. (The woody galls observable on thistles are occasioned by two-winged flies *Tephritis Cardui.* Thistles in general can only be considered as noxious interlopers, to be eradicated by all possible means ; (not being allowed to seed even by the road side ;) and for this purpose a new method has been lately suggested, which, though at first view, on a broad scale, apparently little less whimsical than that of catching birds by putting salt on their tails, has been thought worthy attention by practical agriculturists, as the following extracts from the Farmer's Journal evince :—" I have no doubt that salt may be of use in destroying thistles. I have made several experiments, which have uniformly been attended with success. The most effectual way is to cut off or bruise the thistle, and then put a small portion of salt on it ; very few will survive this treatment." Another correspondent confirming the above report, " A small quantity of common salt, taken between the finger and thumb, and pressed upon the centre of the thistle, will in two or three days cause the plant to turn quite black ; and in eight or ten days the root and every part will be destroyed. I have found this a cheap and certain mode of clearing land from thistles. One person will salt as many as four or five would cut up in the usual way ; and with this difference, that the salt completely destroys the weeds, whereas the spud merely retards them for a short period, to be ultimately more productive." The same mode is equally effective with docks, nettles, &c., and as the mineral may now be obtained at a low price, and its application is a suitable occupation for children, the practice may merit more general adoption. E.)

Var. 2. *Cristatus.* A monstrous variety, with a broad flat stem and head of flowers.

Stem three quarters of an inch broad. Cluster of flowers two inches and a half broad, the upper edge crowned with a continued line of florets, so as to give it the appearance of the *Cockscomb Amaranthus* of the gardens. St.

The root produced the same singular variety for two years together.

C. ACANTHO'IDES. Leaves indented, spinous at the edge: calyx on fruit-stalks, solitary, upright, woolly: (scales strap-shaped, recurved : down capillary. E.)

Curt.—(*E. Bot.* 973. E.)—*Jacq. Austr.* 249—*Lob. Ic.* ii. 21—*Tabern.* 1080. 1—*Ger.* 1010. 1—*Ger. Em.* 1173. 1—*J. B.* iii. 59—*H. Ox.* vii. 30. 11—*Pet.* 21. 2.

Stem solitary, three or four feet high, angular, leafy, edged with a border set with numerous stiff yellow thorns of various lengths. *Leaves,* the *lower* wing-cleft; wings broad, blunt, obscurely five-cornered, with five imperfect lobes, the terminal one very broad and blunt, cottony underneath, above smooth, excepting a few short hairs arising from glandular warts; ribs ending in sharp yellow thorns; *those above* pointed, wings triangular, confluent. *Flowers* sessile, crowded, pointing upwards, sidewise, and downwards; sometimes in branched bunches, terminating the branches, on short fruit-stalks upright or open. *Calyx scales* spear-shaped, yellowish green, the upper expanding, the innermost chaffy, all tipped with sharp thorns. *Blossom,* segments somewhat longer than the anthers, which are even with the pistil. *Down* nearly as long as the blossom, hair-like. Woodw. Scales of the calyx scarcely thorny, not close as in *C. palustris.* Curt. *Flowers* purplish red, sometimes white.

CURLED or WELTED THISTLE. (Welsh: *Ysgallen grych.* E.) *C. crispus.* Huds. Lightf. *C. polyacanthos.* Curt. *C. crispus* of Linn. has not been found in these Islands. Ditch-banks, on rubbish, borders of corn-fields. Plentifully on banks and under walls near Yarmouth, and also in waste places far from the coast. Mr. Woodward. Road-sides about London. Dr. Stokes. (Near Bolleit, Land's End. Rev. Pike Jones. On Bryn-gwydryn, Anglesey. Welsh Bot. King's Park; Mr. Bainbridge: about Portobello, near Edinburgh. Dr. Greville. E.) A. June—Sept.*

C. TENUIFLO'RUS. Leaves spinous at the edge: branches straight, flowers in clusters, sessile: calyx nearly cylindrical, scales upright, but open, pungent: (down capillary. E.)

Curt.—(*E. Bot.* 412. E.)—*J. B.* iii. 56. 1. (*not* 516, *as in Fl. Lond.*)—*Park.* 982. 5—*H. Ox.* vii. 31. 13—(*Pet.* 21. 3. E.)

Stem and *branches* quite straight, cottony upwards; bordered. *Leaves* cottony underneath. *Calyx* oblong-conical; scales upright, spreading at top, long, narrow, ending in a yellow thorn as long as the florets. Curt. *Flowers* pale-purplish red. (*Florets* fewer, aggregate, therefore more slender than in any other species. *Plant* three or four feet high. E.)

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* (This is not one of the most troublesome of its tribe; being annual, and less abundant than some others. *Papilio Cardui* has been observed upon it. E.)

SLENDER-FLOWERED THISTLE. (Welsh: *Ysgallen mân-flôdeuog. C. tenuiflorus.* Curt. *C. acanthoides.* Huds. Lightf. With. Ed. 2. E.) Hedges, ditch-banks, and under walls; very common near London. (Between Edinburgh and Leith. Sir J. E. Smith. Near Redcar, Yorkshire, common. Rev. J. Dalton. Frequent on the coast of Suffolk and Sussex. About Dorchester, and Bensington, Oxfordshire. Sibthorp. Common about Newcastle, Northumberland. Mr. Winch. Near Beaumaris. Welsh Bot. Teignmouth, and Berry Head. Rev. Pike Jones. On Sydenham Common, Mr. Graves has often observed this species with a *white* flower. A. E.) July—Aug.

C. LANCEOLA'TUS. (Leaves wing-cleft, hispid: segments spinous, wide, apart: calyx egg-shaped, spinous, woolly: stem hairy, furrowed: down feathery. E.)

E. Bot. 107—*Fl. Dan.* 1173—*Tabern.* 1078. 2—*Ger.* 1011. 6—*Ger. Em.* 1174. 6—*Park.* 982. 9—*H. Ox.* vii. 31, *row* 1. 7—*Pet.* 21. 7—*J. B.* iii. 58. 1.

Stem angular, cottony, frequently purple. *Leaves* half embracing the stem, cottony and glaucous underneath, hairy and deep green above; wings spear-shaped, the terminal one long, the side ones mostly divided to the base into two segments, one pointing upwards, the other downwards, terminating, as do also the wings of the part running down the stem, in sharp stiff white thorns, which are extensions of the ribs. *Calyx* with numerous ranges of spear-shaped scales, somewhat cottony, ending in sharp stiff white thorns, the inner strap-shaped, pointed, not thorny. *Blossom* purple. *Down* feathered, almost as long as the blossom. Woodw. (From two to five feet high, or more. *Flowers* large, solitary. E)

SPEAR THISTLE. (Welsh: *March Ysgallen.* Gaelic: *An deilgneach. C. lanceolatus.* Linn. *Cnicus lanceolatus.* Willd. Hook. Sm. Grev. E.) Rubbish, road-sides, and other waste places. B. July—Aug.*

C. NU'TANS. Leaves decurrent half way down towards the next below: spinous: fruit-stalks crooked: calyx, scales expanding upwards: (flowers solitary: down capillary. E.)

Fl. Dan. 675—(*E. Bot.* 1112. E.)—*H. Ox.* vii. 31, *row* 1. 6—*Pet.* 21. 1—*J. B.* iii. 56. 3.

Stems two to three feet high, scored, cottony. *Branches* alternate. *Fruit-stalks* terminal, cottony. *Leaves* with wing-cleft; wings egg-shaped, with strong thorns. *Calyx* scales spear-shaped, cottony, the rib running along the back terminating in a thorn, the lowermost bent back, the inner without thorns. *Down* hair-like, nearly as long as the florets. Woodw. (*Flowers* smelling strongly of musk in warm weather; their drooping posture distinguishes them from our other thistles. E. Bot. E.) *Stem, leaves,* and *calyxes* overspread with a cobweb kind of woolliness. *Calyx* globular, flatted; scales very strong, horizontal when the flower is expanded, purplish towards the end, terminating in a strong yellow thorn. *Blossom* tube whitish, border purple. *Filaments* woolly. *Pollen* grey, globular, set with fine points.

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* Few plants are more disregarded than this, and yet its use is very considerable. If a heap of clay be thrown up, nothing would grow upon it for several years, did not the seeds of this plant, wafted by wind, fix and vegetate thereon. Under the shelter of this, other vegetables appear, and the whole soon becomes fertile. The flowers, like those of the Artichoke, have the property of curdling milk. Sheep and swine refuse it; neither horses, cows, nor goats are fond of it. *Papilio Cardui* and the Thistle Ermine Moth feed upon it. Linn. (This cumbrous weed, being biennial, is readily destroyed by mowing before its flowers form seed. Sm. E.)

MUSK THISTLE. Pastures, (waste ground, and fallow-fields. E.) In a calcareous soil. Road-sides in a sandy or gravelly soil.
A. June—July.*

(C. TUBERO'SUS. Leaves with slightly winged stalks, wing-cleft, lobed, fringed with prickles: stem unarmed, with about two stalked flowers: calyx-scales spear-shaped, pointed, rather spreading: down feathery. E.)

E. Bot. 2562.

Root sending down oblong perpendicular knobs. *Stem* two feet high, leafy, furrowed, hairy, simple, except at the top. *Leaves* variously cut, fringed with copious yellow prickles. *Flowers* on long, hairy stalks, at first rather drooping, bright purple, with a slightly downy *calyx*. E. Bot. *Flowers* resembling those of *C. heterophyllus*, but smaller. Linn.

TUBEROUS THISTLE. *C. tuberosus.* Linn. *Cnicus tuberosus.* Willd. Sm. Discovered by A. B. Lambert, Esq., in a wood called Great Ridge, between Boyton House and Fonthill, Wilts, growing plentifully in one spot only.
P. Aug. E.)

(2) *Leaves sessile.*

(C. ARVEN'SIS. Leaves wing-cleft; spinous: stem panicled: calyx egg-shaped, with small spines: down feathery. E.)

Kniph. 6—*E. Bot.* 975—*Fl. Dan.* 644—*Col. Ecphr.* i. 46—*Ger. Em.* 1173. 4—*Park.* 959. 7—*H. Ox.* vii. 32. 14—*Pet.* 21. 5—*J. B.* iii. *a.* 59. 2.

The down of the seed is very long, (feathery, deciduous, not permanent as in *Serratula.* E. Bot. E.) *Blossom* pale purple, (rarely white. *Root* creeping, tuberous, and descending deep into the earth, very tenacious of life, and difficult to extirpate. *Stems* upright, three feet high, leafy, cylindrical, smooth, bearing many flowers. *Leaves* sessile, scarcely decurrent, alternate. Fl. Brit. We follow the arragement of Curtis, since adopted by Smith, in removing this plant from the genus *Serratula;* which indeed seems to have been the intention of Linnæus.

CREEPING THISTLE. WAY THISTLE. (Welsh: *Ysgallen gyffredin yr âr.* Gaelic: *Foghenan Cluaran.* E.) *C. arvensis.* Curt. Sibth. Relh. Fl. Brit. *Serratula arvensis.* Linn. Huds. With. Ed. 4. Relh. Ed. 1. Hull. Sym. Syn. Abbot. Mart. *Carduus vulgatissimus viarum.* Raii. Ger. Em. (Too common by road-sides and in fields. E.)
P. July. E.)†

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* (The down of this, as of some other species, may be advantageously used as a material in making paper. Flocks of goldfinches, (*Fringilla Carduelis*), the united produce of the summer months, throughout October may be observed sporting and glistening in the sunny beam, aiding the breeze of autumn in scattering the down, (the proverbially "Light as Thistle down") as they busily pick out the seeds for their favourite repast. E.)

† It is said to yield a very pure vegetable alkaly when burnt, (suitable either for bleaching linen or the manufacture of glass. E.) Goats eat it; neither cows, horses, sheep, nor swine are fond of it. Linn. Horses sometimes eat the young tops. St. (The

C. MARIA'NUS. Leaves amplexicaul, halberd-shaped, wing-cleft, spinous: calyx without any leaves near it: thorns channelled, and set with other little thorns! (down capillary. E.)

Kniph. 1—*Curt.* 148—(*E. Bot.* 976. E.)—*Black.* 79—*Ludw.* 35—*Fuchs.* 56—*J. B.* iii. *a.* 52. 2—*Trag.* 850—*Lonic.* i. 70. 2—*Ger.* 989—*Pet.* 21. 9—*Dod.* 722. 1—*Lob. Obs.* 479. 1, *and Ic.* ii. 7. 2—*Ger. Em.* 1150—*Park.* 976. 1—*H. Ox.* vii. 30, *row* 2. 1, *f.* 4—*Matth.* 676.

(*Stem* four to six feet high, leafy, cylindrical, scored, smooth. E.) *Leaves* generally ornamented with broad and beautiful white veins, though sometimes entirely green. The large purple *blossom* and the strong thorns of the calyx, an inch or more in length, sufficiently distinguish this from other indigenous species.

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pappus may be employed as an useful ingredient for the manufacture of paper. The agriculturist whose lands are infested with these noxious weeds, should unceasingly exercise his small hoe or spud; though, for complete extirpation, the instrument for extracting Docks may be preferable. Fallow and hand-weed; but in clay, where they will not draw, cut close with a spade, says Holdich. Mr. Curtis ascertained the annual increase of its root by planting a piece two inches long and the thickness of a goose's quill, and a small head of leaves. By the second of November the root had extended itself eight feet, and when dug up and washed it weighed four pounds. This is the common Way Thistle or Pasture Thistle, which grows almost every where. If neglected, no weed is more unsightly and injurious. The second growth, observes Mr. Holdich, often gets into reapers' hands; but the first, if not destroyed, will overtop the wheat, bearing numerous clusters of flowers, and shedding their winged seeds in most noxious abundance. The propagation by root seems also unceasing., The same writer states, "the roots are jointed, white, and of a very succulent texture. I have found in spring, innumerable small Thistles, as it were, bursting from their matrix, and have gently pulled the horizontal zigzag roots from the soil, with many green buds and shoots just appearing. This, therefore, is their manner of reproduction: the fibres left shoot out larger roots, which also rise higher in the soil, and spread; these form buds, and hence come our annual crop of Thistles. Thus Providence has contrived a necessity for perpetual exertion, attended with proportionate success. "By the sweat of thy brow thou shalt eat bread," is an ordination, the fulfilment of which is the principle which puts all mankind in motion. The necessity of subsistence produces industrious hands for every department of labour; but the indolent nature of man requires every stimulus to exertion. The weeds of the field excite emulation, and foul fields are always a reproach. Thus are we compelled by an unseen hand to better habits and more active industry." Essay on Weeds of Agriculture. The same argument may be found admirably extended in the "Pastoral Conversations" of Dr. Warton, exposing the folly of Atheism. The most unwelcome weeds are there proved not only to be essential to stimulate the requisite exertion of man, but, in a certain degree, to be indirectly conducive even to his sustenance, by supplying food to numerous tribes of insects, which again tend to the support of other animals, as birds, &c. on which he partially depends.—This, and several other of the *Carduaceæ*, may be considered dioecious. Mr. Smith (in Linn. Tr. vol. xiii.) observes, *C. arvensis* rarely produces seed; which is chiefly attributable to the separation of the sexes, and the plants of each sex growing together in large patches without intermixture: hence the chance of fecundation being effected is much diminished. This apparently defective arrangement would seem to be obviated by an extraordinary power of radication. E.) *Cassida liriophora* inhabits this species of Thistle. *Uredo suaveolens*, "confluent, odoriferous, seeds purplish brown," is frequently found on the leaves, changing them to a light yellow in spots. In corn-fields may sometimes be observed a beautiful little nondescript mouse, the smallest of British quadrupeds, which attaches its nest, ("a wonderful procreant cradle," as Mr. White describes it, perfectly round, about the size of a cricket ball, most artificially platted, and composed of the blades of wheat,) containing eight young ones, suspended, as it were, in the head of a thistle! E.)

Milk Thistle. Irish: *Bearnan breack*. Welsh: *Ysgallen wen*. E.) Ditch-banks and road-sides, borders of corn-fields, and on rubbish.
A. June—Aug.*

C. **eriophorus**. Leaves with wing-cleft pointing two ways, every other segment upright: calyx globular, woolly: (down feathery. E.)

Jacq. Austr. 171—*E. Bot.* 386. E.)—*Clus.* ii. 154—*Dod.* 723—*Lob. Obs.* 482. 1, *and Ic.* ii. 9. 2—*Ger. Em.* 1152—*J. B.* iii. *a.* 57—*Park.* 978—*Mill. Ic.* 293.

Stem four or five feet high, angular, scored, woolly, much branched. *Root-leaves* one to two feet long, wings distant, with two lobes, unequal, the larger strap-shaped, the lesser spear-shaped, very entire, but fringed with a few fine thorns; mid-rib stiff, extending out into a sharp thorn; above green, with numerous short stiff hairs pressed closely; underneath with a thick, woolly, white down. *Stem-leaves* embracing the stem; lobes not so regular, all spear-shaped, the terminal one long. *Fruit-stalks* slender, extremely cottony. *Calyxes* clustered, terminating the stem and branches; scales strap-spear-shaped, ending in a long softish thorn, covered and interwoven with a thick cobweb-like wool. *Anthers* extending beyond the blossom. *Style* much longer than the anthers. *Summit* very slightly cloven. *Seeds* large, whitish, nearly oval, without ridges. *Down* feathered, shorter than the blossom. Woodw. *Blossom* purple, or white, very large.

(The large lobes of the *leaves* pointing alternately horizontally and downwards, distinguish this plant at first sight.

Woolly-headed Thistle. Friar's Crown. (*E. Eriophorus.* Linn. *Cnicus Eriophorus.* Willd. Hook. Sm. E.) Both in flat and mountainous meadows and pastures. Ray. Bredon Hill, Worcestershire. Nash. By the road-side between Stamford and Grantham, plentifully. Smith. About Ripton, Huntingdonshire. Mr. Woodward. Hillend Bank, in Longdon Parish, Worcestershire. Mr. Ballard. On the foot-way between Clarkton Leap and Kemsey, Worcestershire. Stokes. Near Truro, Cornwall. (Bewcastle, Cumberland. Hutchinson. About Revel's Hill, Dorset, but rare. Pulteney. Berry Head, Devon. Rev. J. Pike Jones. By the side of the road from Warwick to Stratford, at the turn to Snitterfield; Overley Hill. Perry. Road-side near Oxenford castle and Chesterhall. Maughan. Grev. Edin. Hedge and quarry at Fulwell, near Sunderland. Near Bristol, as around Keynsham, &c. E.)
B. July—(Aug. E.)†

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* This Thistle is eaten when young as a salad. The young stalks peeled, and soaked in water to take off the bitterness, are excellent, and may be either boiled, or baked in pies, (after the manner of Rhubarb. E.) The scales of the cup are as good as Artichokes. The root is palateable early in the spring. (The seeds yield an oil, which may be used in emulsions. ("Our Lady's Milk Thistle," according to Romish tradition, a proper diet for nurses! It is worthy of a place in the shrubbery fore ground, waving its ascribed efficacy. E.)

† (According to Miller, "one or two of these plants may be allowed a place in some abject part of the garden for its singularity." We should rather commend it to the shrubbery or wilderness, and there sparingly. Upon the disc of this, and other late flowering Thistles, may frequently be observed, with vital energies all but extinct, (in his sad extremity warning the proudest mortals) the torpid humble-bee, resigned to die upon his crimson couch;—"just lifts a limb to pray forbearance of injury, to ask for peace, and bids us leave him, leave him to repose." E.)

C. PRATEN'SIS. Leaves spear-shaped, irregular, and edged with unequal prickles; cottony beneath: stem cottony, generally with one flower and two leaves: (calyx cottony: down feathery. E.)

E. Bot. 177—*Pet.* 22. 1—*Clus.* ii. 148. 1—*Ger. Em.* 1183. 1—*Lob. Obs.* 314. 4, *and Ic.* i. 583. 1—*Park.* 961. 3—*J. B.* iii. 45. 2.

Root fibrous and creeping. *Stem* one and a half to two feet high, soft, cob-webbed or cottony, cylindrical, generally unbranched and supporting a single flower, but sometimes a branch terminated by another flower rises from the bosom of the upper leaf. *Root-leaves* four or five, oblong-spear-shaped, ragged at the edge, and fringed with softish prickles unequal in size, not forming regular teeth, as represented in most of the figures. *Stem-leaves* generally two, sometimes only one, semi-amplexicaul; the upper not prickly at the edge, but terminated by a long soft thorn. All the *leaves* green, and more or less hairy above, grey and cottony underneath. *Calyx*, scales thick and strong, cob-webbed or cottony at the edges, terminating in a soft thorn. *Blossom* red. *Anthers* with five horny, yellow, spear-shaped points. *Summit* cylindrical, blunt, not notched at the end. (Mr. Woodward observes, that this plant varies with two, three, or even four flowers, distant, alternate. When more than one flower, the second overtops the terminal one. E.)

MEADOW THISTLE. SINGLE-HEADED THISTLE. *C. heterophyllus.* Lightf. 456. Relh. 306. *Cirsium Anglicum.* R. Syn. 193. (*C. pratensis.* Huds. With. Ed. three and four. Hull. Sibth. Fl. Brit. &c. *Cnicus pratensis.* Willd. Hook. Sm. A species wholly unknown to Linnæus. E.) Moist meadows and pastures, not uncommon. Near Heydon, Norfolk. Bryant. Swampy meadows near Robinson's End, Malvern Chase. Mr. Ballard. Meadows between Pucklechurch and Mangotsfield, plentiful. Rev. G. Swayne. Woods in the Isle of Wight. (Wortham, Suffolk, abundantly. Mr. Woodward. Houghton Moor, Yorkshire. Teesdale; and between Goule and Thorne, with *Selinum palustre* and *Myrica Gale.* Rev. W. Wood. Castle Eden Dean; and south shore of the Tyne. Mr. Winch. Loch-na-daal, Isla. Dr. Walker. Hook. Scot. E.) P. May—June.

(**C. HETEROPHYL'LUS.** Leaves embracing the stem, spear-shaped, fringed with small prickles, (either entire or jagged, woolly underneath: stem downy, mostly single-flowered: down chiefly feathery. E.)

(*Hook. Fl. Lond.*—*E. Bot.* 675.—*Fl. Dan.* 109. E.)—*Hall.* 7, *vol.* i. *p.* 77—*Mill.* 94—*Clus.* ii. 148. 2—*Ger. Em.* 1183, *fig.* 2*d*—*Park.* 961. 5—*J. B.* iii. 46. 2—*Pet.* 22. 2.

Root creeping, knotty, black. *Stem* three feet high, erect, seldom divided, with one, or sometimes two flowers, leafy, cylindrical, furrowed, cottony. *Leaves* on the upper surface very smooth, cottony, white beneath; *root-leaves* on leaf-stalks; *stem-leaves* alternate, numerous, at the base heart-shaped, amplexicaul. *Blossom* terminal, becoming upright, drooping when expanded, large, purple stalked. *Calyx* egg-shaped, slightly pubescent, scales spear-shaped, erect, naked at the point, keeled, brownish, terminated by a little spine. *Anthers* whitish. *Stigma* strap-shaped, protruding, purple, notched at the end. *Down* of the outer seeds rough, of the inner ones feathery. Fl. Brit.

C. helenioides of Linnæus differs materially, having a stem twice as high, many more leaves, altogether undivided, and four or more much smaller flowers, sessile at the very top of the stem. Smith states that it is not known either wild or cultivated in Britain.

MELANCHOLY THISTLE. (Gaelic: *Cluas-an-fheidh.* E.) *C. heterophyllus.* Linn. Oed. E. Bot. *C. helenioides.* Huds. Lightf. With. Ed. 3 and 4. Hull. *Cirsium Britannicum Clusii repens.* Raii. Syn. Bauh. Mill. (*Cnicus heterophyllus.* Willd. Hook. Sm. Grev. E.) Mountainous pastures in Yorkshire, Westmoreland, Cumberland, and Wales. Ray. Coppice near Giggleswick, in Skirrith wood, and in the pastures about Bordley, near Malham. Curtis. Mulbarton, near Norwich. Mr. Crowe. Between Shap and Orton, Westmoreland. Mr. Woodward. About Hamsterley and Witton, Durham. Mr. Robson. Pentland Hills, near Currie. Dr. Greville. Roslin and Auchindenny woods. Maughan. Hook. Scot. Said to be more frequent in the Highlands. E.)

P. July—(Aug. E.)*

C. ACAU'LIS. Stemless: calyx smooth: (down feathery. E.)

E. Bot. 161—*Jacq Ic.* iii. (579—*Fl. Dan.* 1114. *E.*)—*Clus.* ii. 156. 1—*Lob. Obs.* 480. 3, *and Ic.* ii. 5. 1—*Ger. Em* 1158—*Park.* 969. 4—*J. B.* ii. *a.* 63. 1—*H. Ox.* vii. 32. 12—*Pet.* 21. 6—*Barr.* 493—*Trag.* 852—*Lonic.* i. 68. 1.

Root-leaves spreading in a circle close to the ground, stalked, wing-cleft; wings irregularly lobed, and waved, angular, thorny at the edge, green on both sides, hairy towards the base. *Flowering-heads* one or more, rarely sessile. *Fruit-stalks* one to two inches high, hairy. *Calyx, lower* scales short, oval-spear-shaped, *upper* spear-shaped, stiff, without thorns. *Blossom* even with the anthers. *Style* longer. *Summit* deeply cloven. *Seed* very small. *Down* long, feathered. Woodw. *Blossom* purple, large. Mr. Relhan informs me, that he once found a plant on Gogmagog Hills with a stem five inches high, bearing three flowers, and a leaf similar to the root-leaves under each flower: and thus it appears when cultivated in a garden.

(Mr. Oade Roberts has observed, on Painswick Hill, a variety with *flowers* perfectly *white.* E.)

DWARF THISTLE. (*C. acaulis.* Linn. *Cnicus acaulis.* Willd. Hook. Sm. E.) Mountainous and rocky dry pastures, especially in calcareous soil. (But too common in many fields, and upland grounds, in Dorsetshire. Pulteney. E.) Blackheath, near London. Dry heaths and commons in Norfolk, very frequent. Mr. Woodward. Dry heaths on the Western side of the county of Durham. Mr. Robson. (Dover, Box-hill, Newmarket; but very rarely, if ever, found in the north of England. Mr.

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* (The Thistle has long been accounted the emblem of Scotland, as the Rose is symbolical of England, the Shamrock of Ireland. It appears to have been substituted by the town council of Edinburgh on their banner, to the exclusion of their patron, St. Giles, about the middle of the fifteenth century; a circumstance probably originating in the dawning light of the Reformation, and an increasing antipathy to popery. This species in particular has been deemed the badge of the house of Stuart, whose princes were wont to wear the *Cluas-an-fheidh* in their crown or bonnet. It is, indeed, as the token flower of resistance, far less illustrative of the national motto, "*Nemo me impune lacessit,*" than several of its congeners; though but too significant of the fallen condition of the ill starred race, since, (according to the Jacobite song),

"The die was Ask'd and foully cast
Upon Culloden day." E.)

Winch. Opposite Moorhall, on the Bidford road; and between Alcester and Red-hill, on the hedge bank. Purton. On a sloping field between Stockwood and Queen's-Charlton, Somersetshire, abundant. E.)
P. July.[*]

ONOPOR'DON. *Recept.* like a honeycomb: *Calyx* tumid: *Scales* spinous.

O. **acan'thium.** Calyx scales expanding, their points standing out: leaves egg-oblong, indented, (cottony on both sides. E.)

Curt. 334—(*E. Bot.* 977. E.)—*Fl. Dan.* 909—*Fuchs.* 57—*J. B.* iii. *a.* 54. 2—*Trag.* 858—*Dod.* 721. 2—*Ger. Em.* 1174. 5—*Park.* 979. 1—*Pet.* 21. 10—*Lonic.* i. 71. 2—*Ger.* 988. 1 *and* 2—*Dod.* 721. 1—*Lob. Obs.* 476. 1, *and Ic.* i. 1. 1—*Ger. Em.* 1149. 1—*H. Ox.* vii. 30, *row* 2. 1—*Matth.* 671—*Lonic.* i. 70. 3—*H. Ox.* vii. 30, *row* 1. 1.

Plant generally covered with a white cottony pubescence. *Leaves* oval-spear-shaped; the lower extremely large, with deep triangular teeth, which are again toothed, and each tooth terminated by a sharp whitish thorn, productions of the ribs; the upper spear-shaped with a few distant teeth. *Stem* leafy, border irregularly toothed, and thorny, the thorns proceeding through and strengthening the border. *Heads* single, upright, terminal. *Calyx* scales ending in sharp thorns. Woodw. (*Stem* upright, about five feet high. *Flowers* terminal, solitary, erect, purple. E.)

Argentine. Cotton Thistle. On rubbish and road sides, (chiefly on a gravelly soil. E.) B. July—(Aug. E.)[†]

CARLI'NA.[‡] *Calyx* radiated: the scales next the blossoms long, coloured: *Recept.* chaffy: *Down* feathery.

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[*] Cows refuse this Thistle. It kills all plants which grow beneath it, whence it is very injurious in meadows. Linn. (However entertaining to the eye of the poet, when,

> "Wide o'er the *thistly* lawn as swells the breeze,
> A whitening shower of vegetable down
> *Amusive* floats;"

to the agriculturist, (whose "frenzy" may possibly be of a different description,) this plant ever appears one of the most pernicious of weeds, which ought not to be tolerated even on the borders of fields, or waste places. Mowing proves but a palliative; the infested pasture should be broken up, and subjected to a course of crops. Where such renovating process cannot be immediately commenced, perhaps the application of salt, under certain circumstances, might prove a desirable expedient, vid. Holdich's Essay on the Weeds of Agriculture, 1825, p. 69. E.) The different species of Thistles afford nourishment to the *Cassida viridis* and *nebulosa*: *Papilio Cardui*; *Cicada cornuta*: *Cimex Cardui*; *Musca solstitialis*; and *Aphis Cardui*: (also *Tingis Cardui*, *Vanessa Cardui*, *Cassida cruentata*, *Apion Carduorum*, *Andrena Listerella*, *Osmia Leaiana*, *Tortrix Mylleri*, and *Populana*. E.)

[†] The receptacle, and the young stems, may be boiled and eaten like artichoke. The ancients thought this plant a specific in cancerous cases. Cows, sheep, and horses refuse it. (The seeds yield a favourite food for the smaller birds. (*Apion Onopordi*, according to Kirby, is found only upon this plant. The cotton is sometimes collected by poor persons for pillows and beds, instead of feathers. Gerard would seem to speak *feelingly* of the defensive weapons of such plants, when he describes them as "set full of most horrible sharpe prickes, so that it is impossible for man or beast to touch the same without great hurt and danger." E.)

[‡] (From a certain exotic species, (supposed *C. acaulis*, whose root is bitter, pungent, and tonic,) said to have been indicated by an angel to the Emperor Charlemagne, for the cure of his army afflicted by the plague. E.)

C. vulga'ris. Stem with many flowers, forming a terminal corymb: rays of the calyx yellow white: (outer ones wing-cleft. E.)

(*Fl. Dan.* 1174—*E. Bot.* 1144. E.)—*Matth.* 669—*Clus.* ii. 156. 2—*Dod.* 739. 2—*Lob. Obs.* 489. 1, *and Ic.* ii. 20. 2—*Ger. Em.* 1159. 1—*Park.* 981—*Fuchs.* 121—*J. B.* iii. *a.* 81. 2—*Trag.* 859—*Dod.* 728. 1—*Lonic.* i. 68. 2—*Ger.* 997. 1—(*Pet.* 15. 10. E.)

Root long, spindle-shaped, with a few stiff fibres. *Stem* twelve to fifteen inches high, tumid just above the root, cylindrical, ribbed, purple, slightly downy, dividing above like an umbel. *Leaves* numerous, clothing the whole stem and decreasing in size upwards, the lower sessile, the upper embracing the stem, deeply toothed, the teeth armed with numerous yellow thorns; those at the base of each branch larger than the upper stem-leaves; those of the branches smaller than the stem-leaves, the uppermost join and form the lower ones of the calyx. *Calyx* scales purplish, edged and terminated with branching yellow thorns; the innermost strap-shaped, pointed at the end, dry, fringed with long hairs towards the base, straw-coloured within; without, reddish brown towards the base, but straw-coloured at the point. *Blossom* segments spear-shaped, purple, straw-coloured below. *Seed* woolly; *down* sessile, rays nine to twelve, generally eleven, either single, or with two or three clefts, fringed with long hairs. *Receptacle*, the chaff longer than the florets. Woodw. (*Blossom*, tube white, border in the outer florets purple, in the inner whitish; sometimes entirely white. Mr. O. Roberts. E.)

Common Carline Thistle. (Welsh: *Ellast cyffredin.* E.) Dry meadows and pastures. B. June.*

BI'DENS.† (*Recept.* chaffy: *Down* rough with reversed prickles: *Calyx* tiled: scales channelled. E.)

B. cer'nua. Leaves spear-shaped, embracing the stem: flowers drooping, on bent fruit-stalks: seeds upright, (with about four bristles. E.)

Curt. 192—*Fl. Dan.* 841—(*E. Bot.* 1114. E.)—*J. B.* ii. 1074—*Ger.* 574—*Pet.* 20. 6—*Lob. Adv.* 227, *and Ic.* i. 529.

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* The flowers of this species expand in dry, and close in moist weather. They retain this property for a long time, and therefore are employed as hygrometers. It is said to be an excellent remedy in hysterical cases. Amœn. Acad. III. p. 64. Goats eat it. Cows refuse it. Linn. Its presence indicates a very barren soil. (It particularly infests dry, sandy pastures. Hand-weeding when confined to local spots may be serviceable; but when spreading generally, no time should be lost in using the plough, harrow, and horse-hoe, and a judicious course of cleansing crops before returning the land to permanent pasture. Holdich. The divergent tuft with which the seeds are crowned, and by which they are wafted through the air, for

"The kind impartial care
Of nature, naught disdains; * *
* * * * * *
From field to field the feather'd seed she wings;"

did not escape the notice of Ossian, who, like other genuine poets, was an accurate observer of the most trivial phenomena, and who fancifully describes "the zephyrs sporting on the plain, pursuing the thistle's beard." The whole plant, after having perfected its seeds, turns white and shrivels, in which state it often remains through the winter or even second year, as Linnæus observes, a mournful spectacle! E.)

† (From *bis*, double, and *dens*, a tooth; alluding to the awns of the seeds. E.)

Leaves with opposite distant serratures. *Flower-leaves* very entire. *Seeds* with four awns, two of which are larger. Woodw. *Stem* a little hairy, (two feet high, branched. E.) *Calyx* segments egg-spear-shaped, with black lines. *Blossom* and *summits* yellow. *Anthers* brown. *Germen* pyramidal, quadrangular.

NUTANT DOUBLE-TOOTH. (BUR-MARIGOLD. Welsh. *Graban ogwydd.* E.) Wet ditches, marshy places. A. Aug.—(Sept. E.)

Var. 2. Flowers with radiated florets in the circumference: (and thus distinguished from *Coreopsis.* E.)

Fl. Dan. [illegible]1.—*B*[illegible] 209—*H. Ox.* vi. 5. 22.

Frequently on the same plant with var. 1. Woodw., as in the lower part of fig. Fl. Dan.

Coreopsis Bidens. Linn. In England, and very frequent in Ireland. R. Syn. 187. [illegible] 2. About Tarporley and other places in Cheshire. Hudson. Norfolk, but not common. At Ditchingham. Mr. Woodward. (Road side between Llanyg[illegible] and Rhyddpont, Anglesey. Rev. Hugh Davies. E.)

Var. 3. *Dwarf.*

Fl. Dan. 312, (*the left hand fig. and dissected floret.*)—*Ray* 7. 2.

Seems to differ in no other respect than in its dwarfish size and wanting the serratures on the leaves, which probably would appear if the plant acquired a more expanded growth in a moister atmosphere. Var. 2 merely exhibits an unusual degree of luxuriance.

B. minima. Linn. In the fish pond on the moor near Somerset Bridge. Surry. Dill. in R. Syn. In a splashy rivulet at the bottom of Tittensor Common, Staffordshire; and also near Birmingham. Stokes.

B. TRIPARTI'TA. (Leaves tripartite: seeds upright, with two or three bristles: calyx leafy at the base: bracteas unequal. E.)

Curt. 237—*Blackw.* 519—(*E. Bot.* 1113. E.)—*Pet.* 20. [illegible]—*Lob.* 595. [illegible]—*Ger. Em.* 711. 1—*Park.* 595. 7—*H. Ox.* vi. [illegible] 20.

Leaves, segments deeply serrated, the middle one much the largest. *Calyx*, scales oval, fringed with hairs, the inner smooth, with yellow membranous edges. Woodw. *Flowers* terminal, yellow, (nearly upright, uniform, tubular, smaller than those of the other species. *Stem* upright, two or three feet high, branched, expanding, leafy, bluntly four-sided, furrowed, smooth. *Leaves* opposite, smooth, sometimes with five segments. E.)

TRIFID DOUBLE-TOOTH. WATER HEMP. (BUR MARYGOLD. Welsh: *Graban cir-rhan.* E.) Marshy and watery places. A. Aug.—(Sept. E.)*

Var. 2. *Dwarf.*

Fl. Dan. 312, (*the right hand figure.*)

Only a starved plant, but its upright flower, and the incipient divisions on the leaves, sufficiently shew to which species it belongs.

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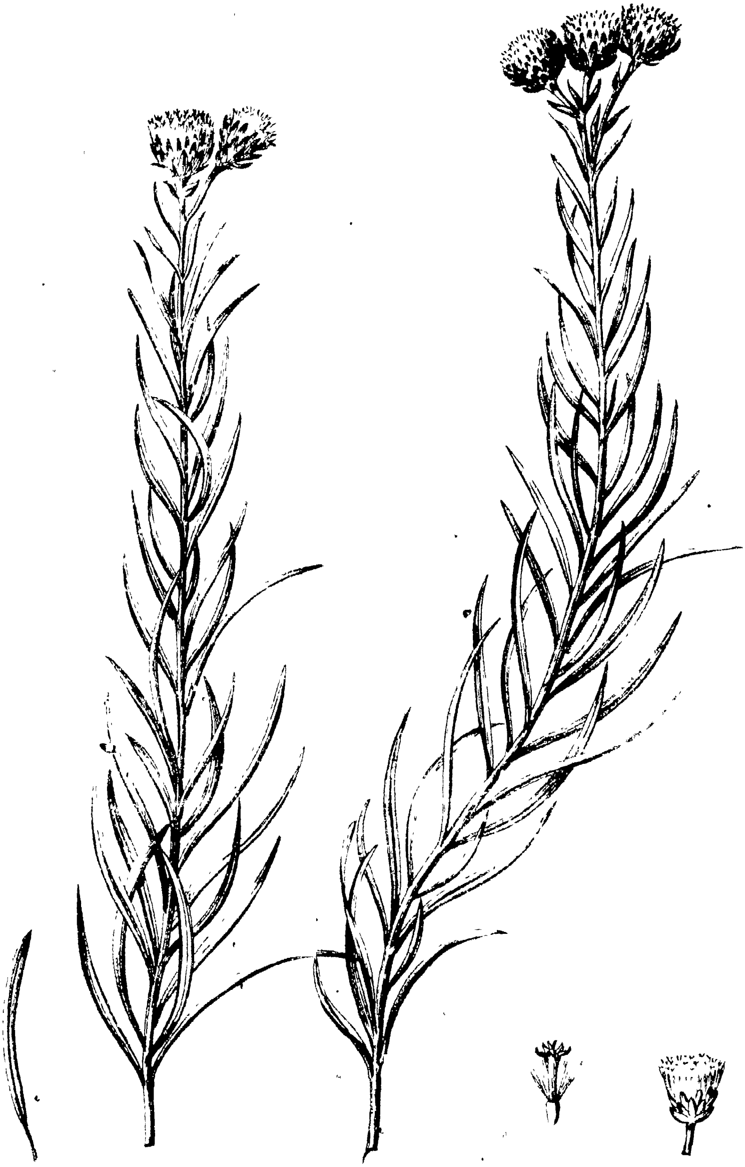
* (A dye may be prepared from this plant, with alum, to stain cloths yellow. Lightfoot states that in chemical qualities it much resembles the celebrated *Verbesina acmela*, and therefore infers the probability of its proving serviceable in calculous complaints. E.)

Pl. XXXV



Chrysocoma Linosyris

W.B. del

EUPATO'RIUM.* *Recept.* naked: *Down* feathery: *Calyx* oblong, tiled: *Style* prominent, cloven half-way down.

E. CANNAB'INUM. Calyx five-flowered: leaves with finger-like divisions.

(*E. Bot.* 428. E.)—*Fl. Dan.* 745—*Blackw.* 110—*Fuchs.* 265—*J. B.* ii. 1065. 2—*Trag.* 491—*Lonic.* i. 241. 2—*Matth.* 1015—*Dod.* 28. 2—*Lob. Obs.* 285. 1, *and Ic.* i. 528. 2—*Ger. Em.* 453. 2—*H. Ox.* vii. 13. 1—*Park.* 595.

Stem three or four feet high, branched. *Leafits* mostly three, sometimes five, spear-shaped sharply serrated at the base, towards the point very entire. *Calyx* scales few, strap-shaped. *Seeds* black, scored, smooth, little more than a line long. *Down* sessile, hair-like, when viewed with a glass finely toothed, not three lines long. Woodw. *Stem* reddish, rather cylindrical, slightly woolly. *Leaves* serrated, slightly woolly. *Calyx* membranous, coloured, a little hairy. *Florets* five and six. *Blossom* purplish red, sometimes white; clefts shallow. *Styles* and *summits* with a tinge of red. *Germen* covered with minute shining globules.

HEMP AGRIMONY. WATER AGRIMONY. (Welsh: *Byddon chwerw.* E.) Banks of rivers and brooks. P. July—Aug.†

Var. 2. Leaves simple, egg-spear-shaped.

This is the seedling plant of early flowers the first year; the second year, as I have frequently observed, it has digitate leaves. Woodw.

Near Lee, in the road to Eltham. Dillenius. Near Bungay. Mr. Woodward.

(**CHRYSO'COMA.**‡ *Flowers* discoid: *Recept.* naked: *Down* simple: *Calyx* hemispherical, imbricated: *Style* scarcely longer than the florets. E.)

(C. LINO'SYRIS. Herbaceous: leaves linear, smooth: scales of the calyx loosely spreading.

PLATE XXXV.—*E. Bot.* 2505.

Root creeping, with long, stout fibres. *Stem* erect, round, rigid, simple, smooth, leafy, a foot high, or not so much. *Leaves* numerous, scattered, linear, acute at each end, entire, rather fleshy, rough with minute white points. *Flowers* few, terminal, corymbose, of an uniform yellow; their stalks hardly scaly in our specimens. *Florets* about thirty, uniform, acute. *Seeds* hairy. *Down* minutely rough. *Cells* of the receptacle with a slight jagged border, not amounting to scaliness. E. Bot.

FLAX-LEAVED GOLDYLOCKS. *Linarea aurea Tragi.* Ger. Em. This rare plant, new to the British Flora, was discovered in the autumn of 1812, by the Rev. Charles Holbech, of Farnborough, Warwickshire, (by whom we have been favoured with specimens,) whilst exploring the rocky promontory of Berry Head, Devon. It grows in great plenty, amongst coarse grasses, about two hundred paces from the westernmost battery, on the Dartmouth side. It has more recently been observed by Dr. Wollaston on the south-western extremity of the Mendip Hills, Somersetshire. P. Aug.—Sept. E.)

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* (Ευπατωριον, of Dioscorides, a surname of Mithridates, king of Pontus, by whom the plant was introduced as an alexipharmic. E.)

† An infusion of a handful of it vomits, and also proves a strong cathartic. An ounce of the root in decoction is a full dose. In smaller doses the Dutch peasants take it as an alterative, and antiscorbutic (the turf-diggers especially, being peculiarly subject to swellings and ulceration of the legs. E.) Goats eat it. Cows, horses, sheep and swine refuse it. (Dr. Swediaur recommends the root as a diuretic serviceable in dropsy. E.)

‡ (From χρυσος, gold; and κομὴ, hair; not inapplicable to the general colour of the flower; but probably applied by Dioscorides to plants of which that circumstance was more obviously characteristic. E.)

ANTOLI'NA.* *Recept.* chaffy: *Down* none: *Calyx* tiled, hemispherical.

. MARIT'IMA. Flowers forming a corymb: leaves oblong, blunt, scolloped, very downy. E. Bot.

icks. H. S.—(*Hook. Fl. Lond.* 137. E.)—*E. Bot.* 141—*Mill.* 135—*J. B.* iii. *a.* 157. 2—*Pet.* 20. 8—*Lob. Adv.* 201, *and Ic.* i. 480. 1—*Ger.* 516—*Clus.* i. 329. 3—*Dod.* 65—*Ger. Em.* 640. 3—*Matth.* 860—*H. Ox.* vi. 4. 47.

Root descending to a great depth, branched. *Stems* recumbent at the base, brittle, cylindrical, leafy; branches upright. *Leaves* numerous, alternate. *Stigma* protruding. Fl. Brit. E.) Whole *plant* white and cottony. *Leaves* spear-shaped, scolloped, blunt. *Chaff* as long as the calyx. *Seeds* two-edged, downless, whence it should seem to be rather a species of *Santolina.* Linn. *Blossom* bright yellow. (*Florets* remarkably prolonged down the sides of the germen, forming two ear-like appendages, whence the novel generic distinction, *Diotis,* of Desfontaines. E.)

EA COTTON-WEED. (Irish: *Liah Luss beag.* Welsh: *Llwyd boneddig; Môredafeddog. S. maritima.* Huds. With. Willd. Fl. Brit. E.) *Athanasia maritima.* Linn. (*Diotis maritima.* Hook. Sm. E.) On the sea shore. Near Abermeney Ferry in Anglesey; and between Penzance and St. Michael's Mount, Cornwall. Ray. Isle of Shepey; and near Poole, Dorsetshire. Hudson. On the Devonshire coast. (On the beach just above high-water mark, one mile north of Landguard fort, Suffolk. Sir J. E. Smith. On the Burton and Bridport sands. Rev. Palk Welland. E.) P. Aug.—Sept.

SUPERFLUA.

ANACE'TUM. *Recept.* naked: *Down* none: *Calyx* hemispherical, tiled: *Florets* of the circumference trifid, narrow-strap-shaped, sometimes wanting.

. VULGA'RE. Leaves doubly winged, cut, serrated.

oodv. 115—*Kniph.* 2—(*E. Bot.* 1229. E.)—*Ludw.* 22—*Fl. Dan.* 871—*Dod.* 36. 1—*Lob. Obs.* 432. 1, *and Ic.* 749. 1—*Ger. Em.* 650. 1—*Park.* 81. *b.*—*H. Ox.* vi. 1, *row* 1. 1, *f.* 1—*Pet.* 20. 9—*Blackw.* 464—*Fuchs.* 46—*J. B.* iii. *a.* 131. 2—*Ger.* 525. 1—*Trag.* 158—*Matth.* 908—*Lonic.* i. 151. $.

(Supposed to be derived from a district of Gaul, near the Alps, wherein it abounds. E.)

(*Flowers* golden yellow, numerous, forming a dense corymb: *florets* of the circumference rarely apparent. E.) *Stem* frequently reddish, (upright, two feet high, scored, scarcely hairy. *Leaves* alternate, amplexicaul. *Leafits* of the calyx blunt, membranous at the edge. Imparts an agreeable aromatic odour. E.)

COMMON TANSY. (Irish: *Luss na Frank.* Welsh: *Gystlys cyffredin.* E.) Mountainous meadows and pastures. Banks of rivers and swampy places: (also on dry banks. E.) Banks of the Irwell and other places about Manchester. Mr. Caley. Banks of the Dove. Mr. Pitt. Between Piper's Hill and Bridgewater; and in Devonshire, (as about Teignmouth, Torquay, &c. frequent. (It abounds at Wark, and Ford-castle, near Kelso: also on the side of Gare-loch, on the borders of Scotland. Encyc. Brit. Opposite Alcester mill, on the side of the turnpike road. Purton. Plentiful on Newmarket Heath, Cambridgeshire. By the side of a rill between Penmon church and the sea, Anglesey. Welsh Bot. Among the cliffs at Cheddar, Somersetshire. E.) P. June—(Aug. E.)*

Var. 2. Leaves curled.

Ger. 525. 2—*Dod.* 36. 2—*Lob. Obs.* 432. 3, *and Ic.* i. 749. 2—*Ger. Em.* 650. 2—*Park.* 81. *a*—*J. B.* iii. 132.

Ray informs us that this variety was first observed in England. It grows by the Tees near Connis Cliffe, Durham. Mr. Robson. (Lane near Wolsington, Northumberland. Mr. Winch. E.)

ARTEMIS'IA.† *Recept.* slightly hairy or naked: *Down* none: *Calyx* tiled: scales converging: *Florets* radiate, none.

(1) *Stems trailing before flowering.*

A. **CAMPES'TRIS.** Leaves many-cleft, strap-shaped: stems wand-like.

(*E. Bot.* 338—*Fl. Dan.* 1175. E.)—*Ger.* 948. 5, *Abrot. camp.*—*J. B.* iii. *a.* 194. 2—*Pet.* 20. 4—*Dod.* 33. 2—*Lob. Obs.* 442. 3, *and Ic.* i. 767. 2—*Ger.* 1106. 5—*Park.* 94. 7—*Matth.* 852—*Lonic.* ii. 23. 2.

Stems numerous, (often reddish, about two feet high, E.) angular, declining, much branched. *Leaves,* the upper frequently simple, very narrow. *Heads* very small, scarcely more than a line broad, numerous, single, either sessile or in short branched spikes. *Calyx* scales few, bluntly egg-shaped, approaching, green, slightly downy at the back, the edges membranous, whitish, shining. *Florets* not longer than the calyx. Woodw. (those of the disk about twelve, tipped with purple; of the circumference two or three, awl-shaped, entire, yellow. Sm. E.) *Leaves* thread-shaped, from a quarter to one inch or more in length. *Flowers* axillary. (*Herb* neither aromatic nor bitter. E.)

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* Tansy is a warm and deobstruent bitter, and its flavour not ungrateful. (It is frequently admitted into gardens for culinary purposes. E.) The tender leaves and juice are sometimes used to give a colour and flavour to puddings. If a dead animal substance be rubbed with this plant, the flesh fly will not attack it. The Finlanders obtain a green dye from it. Cows and sheep eat it. Horses, goats, and swine refuse it. It affords
(also to *Andrena*
is herb flourishes
ere Mr. Frederick
Russell observed boys gathering a boat-load of it to convey to Bristol for the purpose of making wine. Dr. Threlkeld relates the case of a soldier at Montpellier who was cured of an obstinate dropsy by the decoction of Tansy alone. Of the juice of the tender leaves, with eggs, are composed Tansy cakes, used at the Paschal season by Papists, to dissipate the flatulencies occasioned by what the above authority terms, "the idle conceit of eating fish and pulse for forty days in Lent; but," the Doctor adds, "I have seen several victims to superstition, who have broken an hale constitution by that presumptuous fasting, so that neither Tansy nor steel could repair it." E.)

† (From Ἄρτεμις, a name of Diana, who presided over women in child-bed; the plant originally so called being of more decided efficacy in promoting parturition. E.)

Field Southernwood. Balks of corn-fields and road sides at Elden, Suffolk, and a mile from Barton Mills on the road to Lynn. Ray. Near Thetford, on the side of the road to Norwich. Mr. Woodward. (On Icklingham heath, near Bury. Sir T. G. Cullum. Fl. Brit. E)
P. July—(Aug. E.)

A. marit'ima. (Leaves many-cleft, downy; the uppermost undivided: flowers oblong, downy, sessile: receptacle naked. E.)

(*E. Bot.* 1706. E.)—*Ger.* 940. 1—*Pet.* 20. 2 *and* 3—*Lob. Ic.* i. 755. 1—*Ger. Em.* 1099. 1—*H. Ox.* vi. 2. 20—*H. Ox.* vi. 2. 19.

(Whole *plant* cottony, white, and aromatic. *Flowering-branches* bent. Flowers of the circumference only about three. E.) *Leaves* vary much in their division; the upper generally simple, strap-shaped, blunt. Woodw. *Blossom* brown. (*Calyx* downy on the outside, membranous at the edge. E.)

(In page 1706 of E. Bot. are described what are considered by some Botanists as two distinct species, viz. *A. maritima* and *A. gallica*, which latter, *A. maritima* γ of Fl. Brit. the author states to be more properly represented by plate 1001 of E. Bot. The sole distinction, originally suggested by Willdenow, seems to be the *drooping* or *upright* flower; or, according to Smith, in *A. maritima*, "Flowers drooping, sessile;" in *A. gallica*, "Flowers erect, partly stalked, of few florets." E.)

(Rev. Hugh Davies describes a nearly similar var. with pendulous flowers, inclining to one side. On a rock below the mill in Bodowen Park, Anglesey. E.)

Var. 2. Segments of the leaves very short.
J. B. iii. *a.* 177—*Barr.* 460.

Sea Southernwood or Wormwood. Sea-shores. Yarmouth, and elsewhere on the coast. Mr. Woodward. Sea coast between Rampside and Barrow. Mr. Gough. Isle of Walney. Mr. Atkinson. (Garston, near Liverpool. Mr. Shepherd. On the shores of Wear, near Hilton Castle, Durham. Winch Guide. Frequent about Teignmouth. E.)

(*A. maritima* var. *gallica*, has been observed by Mr. Winch on Willington Ballast Hills, Durham; by Rev. H. Davies on rocks above the sea, south-west of Aberffraw, Anglesey; and by Mr. D. Don on the coast near Arbroath; also by Mr. Maughan at Peffer burn, and at St. Mary's Isle, with the preceding. In like circumstances, at Sandwich Haven, by Mr. Gerard E. Smith. E.)
P. Aug.—Sept.*

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* This in its wild state smells like marum or camphor, but in our gardens it is less grateful, though still much more so than the next species. It is used as an ingredient in distilled waters, and beat with thrice its weight of fine sugar is formed into a conserve. Its virtues are the same with those of the next species, but in a weaker degree. Horses eat it; cows, goats, and sheep eat it. (Threlkeld informs us that in Ireland the country people make it into sheaves, and bring it in cars out of the adjacent counties of Meath and Lowth to Dublin, "of which alehouse-keepers make their purl, great consumption of which is made in winter mornings." Syn. Stirp. Hibern. 1727. E.)

(2) *Stems upright, herbaceous: leaves compound.*

A. **ABSIN'THIUM.** Leaves compound, many-cleft, (clothed with short silky down: E.) flowers somewhat globular, pendent: receptacle hairy.

Kniph. 4—(*E. Bot.* 1230. E.)—*Ludw.* 76—*Woodv.* 120—*Blackw.* 17—*Matth.* 685—*Dod.* 23—*Lob. Obs.* 433. 2, *and Ic.* i. 752. 1—*Ger. Em.* 1096. 1—*Park.* 98. 1—*H. Ox.* vi. 1, *row* 3. 1—*Ger.* 937. 2—*Trag.* 335—*Ger.* 937. 1—*Pet.* 20. 1—*J. B.* iii. *a.* 168—*Gmel.* ii. 63.

Leaves cottony on both sides, green above, white and shining underneath, the upper with three clefts, or simple, sessile, bluntly spear-shaped. *Calyx,* scales bluntly egg-shaped, green, cottony at the back, the edges membranous. *Receptacle,* down as long as the florets. Woodw. *Stems* numerous, a foot or more in height, scored, whitish, with very short down. *Spikes* upright. *Flowers* turned downwards. *Blossom* brownish white. (*Root* rather ligneous, branched. E.)

COMMON WORMWOOD. (Irish: *Bofullan ban.* Welsh: *Chwerwlys; Wermod lwyd.* E.) Road sides, rocky places and on rubbish. P. Aug.*

A. **VULGA'RIS.** Leaves wing-cleft, flat, cut, cottony underneath: bunches simple: florets of the circumference five: (receptacle naked. E.)

(*E. Bot.* 978—*Fl. Dan.* 1176. E.)—*Ludw.* 153—*Blackw.* 431—*Woodv.* 121—*H. Ox.* vi. 1, *row* 2. 2, *f.* 3—*Matth.* 848—*Dod.* 33. 1—*Lob. Obs.* 441.

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* The leaves and flowers are very bitter, (and employed in some parts of Wales as a substitute for hops; also laid in drawers and chests to drive away insects from clothes. E.) The roots are warm and aromatic. A considerable quantity of essential oil rises from this herb in distillation, which is used both externally and internally to destroy worms. The leaves, put into sour beer, soon remove the ascescency. They resist putrefaction, and are therefore a principal ingredient in antiseptic fomentations. An infusion of them is a good stomachic, and, with the addition of fixed alkaline salt, a powerful diuretic in some dropsical cases. The ashes afford a more pure alkali than most other vegetables, excepting Bean-stalks, Broom, and the larger trees, (and hence that called Salt of Wormwood usually obtained, but without manifesting any peculiar quality from the specific herb. E.) In the Amæn. Acad. vol. ii. p. 160, Linnæus mentions two cases, wherein an essence prepared from this plant, and taken for a considerable time, prevented the formation of calculous concretions in the kidneys or bladder; the patients forbearing the use of wine and acids. It might be suspected that, like other bitters, its long continued use must weaken the action of the nervous system, but in these instances no such effect took place. (It is said to have suppressed fits of the gout. E.) An infusion of it given to a woman that suckles, makes her milk bitter. It gives a bitterness to the flesh of sheep that eat it. Horses and goats dislike it; cows and swine refuse it. Linn. (*Lima Absinthii* and the rare and singularly elegant Plume-moth, *Pterophorus spilodactylus,* Curt. pl. 161, are found upon it. E.) Turkeys are fond of it. Mr. Hollefear. The plant steeped in boiling water, and repeatedly applied to a bruise, will remove the pain in a short time, and prevent the swelling and discoloration of the part. Stokes. (This is one of those domestic plants, which, associated with mallow, mugwort, hemlock, docks, &c. would seem to follow the footsteps of man, thriving amidst dust and rubbish, and to be found wherever a few miserable hovels are erected. Ramond and De Candolle observed several of these species among the ruins of cottages where shepherds had once lived, high on the Pyrennees; and some years since I remarked, says Mr. Winch, the same circumstance in the Highlands of Scotland. "The constant appearance of these weeds about towns and villages is a curious and inexplicable phenomenon, for no one ever cultivated such plants for utility, much less for ornament." Winch Geog. Dist.

1, *and Ic.* i. 764. 2—*Ger. Em.* 1103. 1—*Park.* 90 *and* 91. 2—*Ger.* 945. 1. 2—*Fuchs.* 44—*J. B.* iii. *a.* 184. 3—*Trag.* 344—*Lonic.* i. 151. 1.

Root woody. *Stem* three or four feet high, angular, scored, often reddish, downy above. *Leaves* above green and slightly cottony; underneath white with thick cotton; wings oval-spear-shaped, deeply serrated, almost lobed, the terminal one large, with three lobes. *Calyx*, scales extremely woolly; edges membranous. *Florets* longer than the calyx. Woodw. *Fruit-stalks* alternate, from the bosom of the leaves. *Blossom* purplish.

(A variety more entirely green is not uncommon. E.)

MUGWORT. (Irish: *Bofullan Liagh.* Welsh: *Bydiawg lwyd; Canwraidd lwyd.* Gaelic: *An liath-lus.* E.) Borders of fields, ditch banks, and on rubbish. P. Aug.*

(3) *Leaves mostly undivided.*

A. **CÆRULES'CENS.** Stem-leaves spear-shaped, entire: root-leaves many-cleft: (florets of the circumference three: receptacle naked. E.)

(*E. Bot.* 2426. E.)—*H. Ox.* vi. 1. 5—*Dod.* 26. 2—*Lob. Obs.* 441. 2, *and Ic.* i. 765. 2—*Ger. Em.* 1104. 3—*Matth.* 687—*Ger.* 946.

(*Plant* rather shrubby, with slender, leafy *branches*, downy when young. *Leaves* of a blueish hoary hue, finely silky in an early state; Sm. downy on both sides. *Flowers* small, cylindrical, mostly erect, in leafy clusters or spikes. E.)

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* In some countries it is used as a culinary aromatic. A decoction of it is a popular remedy for the ague. The Chinese make use of it as a vulnerary, applying the fresh plant bruised. Osbeck. i. 394. A dram of the leaves, powdered, was given four times a day, by Dr. Home, to a woman who had been affected with hysteric fits for many years. The fits ceased in a few days. In this patient asafœtida and ether had been given to no purpose. (The powdered roots have been recently prescribed with much success in epilepsy, on the Continent. Notwithstanding these favourable reports, Mugwort is rarely employed in England, and has been rejected by the London College. E.) Sheep and swine refuse it; neither horses, cows, nor goats are fond of it. Linn. Dr. Anderson informs us, that sheep are very fond of it, devouring it with great greediness, especially the roots, which seem to them a most delicate morsel. *Aphis Absinthii* and *Phalæna Gamma* live upon the several species. (The celebrated ancient caustic of the East, called *Moxa*, is prepared from the cotton of the leaves of this plant; Kæmpfer: or, according to Abbe Grosier, from a species of a softer and more silky nature: but Miller, (judging from dried specimens), considers them the same. It was very generally applied by the ancient Chinese, and with great confidence. The downy pellets are still burnt upon the affected parts, and in apoplectic or lethargic cases, but not unaccompanied with punctures or scarification, to which any relief obtained may be more reasonably attributed. The *lanugo* of Mullein, and other plants, would probably prove equally serviceable. The ashes, when taken as snuff, are said immediately to stop bleedings at the nose. The eastern poets describe the manner in which this *Artemisia* must be gathered as a preservative against witchcraft, on the fifth day of the fifth moon, and suspended over the doors as a sure protection. Similar delusions appear to have been prevalent in Europe, as recorded by Gerard with a salutary caution. "Pliny saith, that the travailer or waifaring man, that hath the herbe tied about him, feeleth no wearisomnes at all, and that he who hath it about him can be hurt by no poisonsome medicines, or by any wilde beast, neither yet by the sunne it selfe. Many other fantasticall devises invented by poets are to be seene in the workes of the auncient writers, tending to witchcraft and sorcerie, and the great dishonor of God, wherefore I do of purpose omit them as things unwoorthie of my recording, or your reviewing." E.)

Blueish Mugwort. Sea shores. Near Boston, Lincolnshire; (Mr. Tofield, Hudson; but not found there by any one else, and there seems equal reason to doubt whether the stations named by Gerard, viz. about Rye and Winchelsea Castle, and near Portsmouth, are now productive of the plant. E.) P. Aug.

GNAPHA'LIUM.* *Receptacle* naked: *Down* hair-like or feathery: *Calyx* tiled, membranous: *Scales* coloured at the edge.

(1) *Herbaceous; yellow-flowered.*

G. lu'teo-al'bum. Leaves sword-shaped, half-embracing the stem, waved at the edge, blunt, downy on both sides: flowers crowded.

Dicks. H. S.—(*E. Bot.* 1002. E.)—*Kniph.* 1—*Pluk.* 31. 6—*Barr.* 367—*J. B.* iii. *a.* 160. 2—*Pet.* 18. 5—*Ger.* 522. 3—*Clus.* i. 329. 1—*Ger. Em.* 643. 13—*Park.* 686. 6—*H. Ox.* vii. 11, *row* 2, *f.* 3—*Lob. Ic.* i. 485. 2—*Park.* 688. 9.

(*Stems* six to twelve inches high, spreading at the base, then upright, undivided, leafy, cylindrical, bearing broad-topped spikes, many-flowered. *Flowers* terminal, crowded together, thickly woolly at the base. Fl. Brit. E.) *Plant* covered with white cottony down. *Calyx* yellowish white, soft: scales egg-spear-shaped. *Florets* of the circumference numerous, often tinged with red.

Jersey Cudweed. Everlasting. Dry banks and walls in the island of Jersey, very common. Ray. Sea coast of Wales. Gerard. West sea coasts. Parkinson. A mile above the first of Bognor rocks. Blackstone. Mr. Relhan has lately found this uncommon plant in the road between Hanxtown and Little Shelford, Cambridgeshire, certainly wild, and also in a gravel pit in the same neighbourhood. E.) A. July—Aug.

(2) *Herbaceous; white-flowered.*

G. margarita'ceum. Leaves strap-spear-shaped, tapering, alternate, (cottony on both sides, densely so beneath: E.) stem branched towards the top: flowers in a corymb.

(*E. Bot.* 2018. E.)—*Munt.* 614. 170—*Clus.* i. 327. 3—*Ger. Em.* 641. 8—*Pet.* 18. 3—*Kniph.* 12—*J. B.* iii. *a.* 162. 2—*Park. Par.* 373. 3.

Florets of the circumference few. *Stem* extremely cottony, white, two feet high. *Leaves* numerous, strap-spear-shaped, long, sessile, growing without order, very entire, dark green and naked above, underneath greenish white, with a thick cotton. *Flowering branches* with numerous crowded heads at the end, on short branched cottony fruit-stalks, with a middle one sessile. *Calyx* bluntly egg-shaped, white, not cottony. *Down* simple, sessile, as long as the calyx. Woodw. (*Receptacle* tuberculated. Sm. E.)

American Cudweed. Pearly Everlasting. Meadows, pastures, and banks of rivers. In a meadow near Bocking, Essex, and on the banks of

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[*] (From γναφευς, a fuller; certain species being soft and woolly as the nap of cloth: and, according to some writers, used as a substitute for cotton or flax, in filling couches and mattresses, and hence denominated *Cotton-weed.* E.)

Rymny river, Monmouthshire, for the space of at least twelve miles. Such are the stations given by Ray, and repeated by Hudson; but the former seemed to doubt its being a native. (We learn from Fl. Brit. that it has, however, recently been discovered by the Rev. T. Butt, near a rivulet in the heart of Wire Forest, Worcestershire; and by Dr. Salt in a meadow at Longdon, near Litchfield. E.) P. Aug.*

G. DIOI'CUM. Runners trailing: stem unbranched: flowers in a simple, terminal corymb, dioecious: (seed-down feathery. Sm. E.)

Barren plant.—*E. Bot.* 267—*Dod.* 68. 1. 2—*Lob. Ic.* i. 483. 1. 2—*Ger. Em.* 640. 4 *and* 5—Fertile plant.—*E. Bot.* 267—*Lightf.* 20. 1, *at p.* 471—*Ludw.* 163—*Kniph.* 3—*Clus.* i. 330. 1—*Dod.* 68. 3—*Lob. Ic.* i. 483. 3—*Ger. Em.* 641. 6—*Park.* 690, *f.* 5—*Pet.* 18. 4—*Fuchs.* 606—*J. B.* iii. *a.* 162. 3—*Lonic.* i. 95. 2—*H. Ox.* vii. 11, *row* 3, *f.* 2—*Trag.* 332—*Garid.* 30, *at p.* 168—*Ger.* 516. 4. 5. 6—*Lob. Adv.* 202. 2, *and Ic.* i. 482. 2.

In the *barren plants* the heads almost globular: in *fertile* ones nearly cylindrical. Linn. Ripe seeds are rarely produced, as is the case with many plants which stole at the root. *Root* woody, brown, with a few stiff fibres. *Runners* several, creeping, leafy, from the crown of the root. *Root-leaves* in a thick tuft, oval at the end, tapering below into a long leaf-stalk, green and slightly hairy above, underneath white with a thick cotton; *stem-leaves* numerous, strap-shaped, half embracing the stem, green above, white and cottony underneath. *Stems* upright, simple, three to seven inches high, white, cottony. *Heads* three to eight, on short fruit-stalks. *Calyx* scales blunt, the outer short, green, cottony; the inner widening upwards, long, smooth, shining, white, frequently tinged with purple; in the barren plants shorter. *Seeds* short; *down* sessile, with simple rays, that of the fertile plants longer than the calyx, that of the barren plants not exceeding the calyx. Woodw. *Blossom* white, purple, or reddish.

(A larger variety, with leaves broader and woolly on both sides, has been sent from the Isle of Skye, by Mr. J. Mackay. Fl. Brit. This plant is said to preserve its habit on cultivation, and has been designated *G. hyperboreum.* We have been favoured with specimens from the original station by Mr. Winch, and observe in our herbarium *G. dioicum,* enlarged by cultivation, with a similar appearance. E.) 4.

CAT'S-FOOT. (*Pes Catti.* E.) MOUNTAIN CUDWEED. (Welsh: *Edafeddog fynyddig.* E.) Dry mountainous pastures in the north of England, Wales, and Cornwall, and on Newmarket Heath not far from Bottesham Beacon. Canham Heath, near Bury, Swaffham Heath, Stratton Heath, Norfolk. Mr. Pitchford. Abundantly on the north and west side of the county of Durham. Mr. Robson. (Race Ground near

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* (The flowers are smoked through pipes in Lancaster county (U. S.) to cure the toothach. Barton. Frequently cultivated as an ornamental plant in the gardens both of England and the Continent; said to have been introduced from America about the sixteenth century. Its enduring quality renders it valuable through the winter; (for, though inferior to several exotic species in brilliancy, its flowers equally retain their pristine appearance for years. This species appears to be dioecious. Vid. Brown, in Linn. Tr. xii. 123.—The fact that many species of the Syngenesia Class are dioecious, or have the barren and fertile flowers on distinct plants, not only escaped the observation of Linnæus, but of his most enlightened successors: and even Jussieu points out *G. dioicum* as "Species una dioica *insigni exceptione.*" For a further illustration of this subject, vid. Linn. Tr. vol. xiii. E.)

Scarborough. Mr. Travis. On Snowdon, towards Beddgelert; also on the uplands in the vicinity of the Black Cataract near Maentwrog. Miss Roberts. At Arbor Low, between Buxton and Ashbourne. Bree, in Purton. Ravine of the Screes, near Wastwater, Cumberland. Mr. Wood. Talwrn, Anglesey. Welsh Bot. E.) P. May—June.[*]

(3) *Herbaceous; resembling a Filago.*

G. SYLVAT'ICUM. Stem undivided, upright: leaves spear-shaped, tomentose, narrowing at the base: flowers in a crowded terminal leafy spike.

(*E. Bot.* 913. E.)—*Fl. Dan.* 254.

Differs from *G. rectum* in having broader leaves, and a short clustered spike of black flowers. Lightf. *Leaves* more attenuated at the base, and less naked on the upper surface than in *G. rectum*. Sm. (*Stem* solitary, undivided, three to five inches high, cottony, leafy. *Down* stiff and rough. *Receptacle* somewhat honey-combed. *Calyx*, scales in the exposed half nearly black, shining, straw-coloured below: *florets* yellowish. Fl. Brit. E.)

HIGHLAND CUDWEED. *G. Norvegicum*. Retz. *G. sylvaticum*, var. Lightf. Woods on mountains in the Highlands of Scotland. (On mountains to the north of Blair in Athol, above Loch Erruch, and Ben Wyvis, Ross-shire, but not in woods. Mr. J. Mackay, in Fl. Brit. About Brampton, Cumberland. Hutchinson. E.) P. Aug.

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[*] (This is an elegant little plant, whose peculiar appearance may well recommend it for domestic culture, and as a substitute for the foreign kinds, most of which, being less hardy, require artificial heat. As the Amaranth flower is the acknowledged symbol of immortality, with equal propriety may the *Gnaphalium* or *Everlasting* be dedicated to never-ceasing remembrance, or that high sentiment which is

—— "Of itself a holy tie,
Yet made more sacred by adversity."

For such is the imperishable nature of our present species, that it retains a perennial bloom through successive years, and constitutes a principal ornament of the dried winter bouquet, for the vase of the saloon, or the head-dresses of our belles.

"Ainsi la main de l'amitiè constante,
Quand tout nous fuit, vient essuyer nos pleurs.
Ton doux aspect de ma lyre plaintive
A ranimè les accords languissans;
Dernier tribut de Flore fugitive,
Elle nous légue avec la fleur tardive,
Le souvenir de ses premiers présens." Dubos.

On the Continent, Phillips informs us, such lasting flowers are frequently used to decorate the monuments and graves of departed friends. Since the hill of Pere la Chaise has been converted into a cemetry for the city of Paris, the demand for these flowers in the French capital has been so considerable, as not only to employ many hands in the cultivation of them, but numerous families are regularly occupied, and entirely supported by forming these "*Immortelles*" into garlands and crosses, which are offered for sale by the cottagers near the entrance of this celebrated burial ground. In the darker ages of idol worship, of such were composed the wreaths which entwined the brows of heathen deities; and thus in Spain and Portugal in the nineteenth century, are the images of Romish saints adorned with the Eastern Everlasting, *G. Orientale*;—to which the preceding remarks also more immediately appertain, though not inapplicable to some of our native species, especially the Pearly, Mountain, and Jersey Everlasting. E.)

G. REC'TUM. Stem upright, terminating in a leafy compound-spike: leaves strap-spear-shaped, almost naked on the upper side, silky beneath. Sm.

E. Bot. 124—*Pet.* 18. 6—*Lob. Adv.* 202. 1, *and Ic.* i. 482. 3. *G. Angl.*—*J. B.* iii. 160. 1—*Matth.* 828. 2—*Ger.* 515. 1—*Ger. Em.* 639. 1—*H. Ox.* vii. 11. 1.

Leaves green and hairy above, white and cottony underneath; *root-leaves* long, strap-spear-shaped, very narrow, in open ground forming a thick tuft; *stem-leaves* strap-shaped, embracing the stem, numerous. *Stem* in woods frequently solitary, twelve (or fewer, E.) to eighteen inches high, in open ground several from one root, shorter, often at first declining, but very soon ascending. *Flowers* in a long bunch. *Flower-stalks* very short, lateral, from the bosom of the leaves, with one to five or more flowers, the lowermost somewhat distant, the upper crowded. *Flower-leaves* similar to, but smaller than the stem-leaves. *Heads* very small. *Calyx* bluntly oval, greenish at the base, yellowish brown upwards, smooth, with shining edges; the outer short, the inner as long as the florets. *Seeds* minute; *down* sessile, as long as the calyx; rays simple. Woodw. *Blossom* yellowish. (A doubtful species. E.)

UPRIGHT CUDWEED. (ENGLISH LIVELONG. Welsh: *Edafeddog uniawn-syth y goedwig. G. rectum.* Sm. Willd. *G. sylvaticum β.* Huds. Hook. Grev. E.) Pastures and woods in sandy soil. Rough pastures near Fladbury, Worcestershire. Nash. On the great Island in Winandermere. Armingdale wood, near Norwich. Mr. Woodward. Sandy heath a mile from Shiffnal, on the road to Wolverhampton. Banks of the canal in the parish of Coseley, Warwickshire. Dr. Stokes. (Ridgway, near Cookhill, Worcestershire: between Wixford and Bidford, on the side of the road, Warwickshire. Purton. Kinderscout, Derbyshire. Mr. W. Christy. Above the mills, Beaumaris. Welsh Bot. Pentland hills; Figget Whins: Mr. Neill. Grev. Edin. Pastures and woods in the county of Durham. Mr. Robson. Lanes about Mottershall, Staffordshire. E.) P. Aug.

G. SUPI'NUM. Stem undivided, trailing: flowers few, scattered: (leaves strap-spear-shaped, somewhat cottony on both sides. E.)

Dicks. H. S.—(*E. Bot.* 1193. E.)—*Lightf.* 20. 2. *at p.* 471—*Scop.* 57. *at* ii. *p.* 152—*Bocc. Rar.* 20. 1, *at p.* 41.

Root-leaves strap-spear-shaped, slightly hairy above, underneath cottony, and greenish white, one half to three quarters of an inch long, in tufts; *stem-leaves* sessile, narrower and longer. *Stem* one and a half to three inches high. *Heads* three and four, alternate, either sessile, or on short cottony fruit-stalks, from the bosom of the upper leaves, which are not longer than the heads. *Calyx*, scales spear-shaped, with a green longitudinal line at the base; the tips and edges shining, of a brownish yellow. *Seeds* elliptical; *down* sessile, rays simple, as long as the florets and longer than the calyx. Woodw.

DWARF ALPINE CUDWEED. *G. alpinum.* Lightf. Dry mountainous pastures and meadows. On almost all the Highland mountains. Mr. Brown. On the top of Ben Lomond. Sir J. E. Smith. (Ben Lawers, and Ben-y-Gloe. Mr. Winch. E.) P. July—Aug.

G. ULIGINO'SUM. Stem branched, spreading: flowers crowded, in terminal clusters: (leaves strap-spear-shaped, cottony on both sides. E.)

Dicks. H. S.—*Fl. Dan.* 859—(*E. Bot.* 1194. E.)—*H. Ox.* vii. 11. 14, *f.* 4—*Dod.* 66. 3—*Lob. Ic.* i. 481. 1—*Ger. Em.* 639. 2—*Park.* 686. 4—*Pet.* 18. 7—*Ger.* 515.

Stem three to nine inches high or more, upright, with a dense white cotton, much branched; branches spreading, more cottony and thicker towards the end, the lower often trailing, clothed with numerous leaves particularly towards the end, and these thickest and most cottony. *Leaves* elliptical, tapering into a long leaf-stalk, slightly cottony and greenish above, more cottony and whitish underneath. *Flowers* nearly sessile. *Calyx*, scales membranous spear-shaped, smooth, brown, shining, when in seed blackish, almost hid in the cotton. *Down* sessile, with simple rays, as long as the calyx. Woodw. Whole *plant*, particularly at the base of the calyxes and fruit-stalks, covered with a cottony substance. (*Florets* yellowish, all fertile. E.)

(MARSH CUDWEED. E.) BLACK-HEADED CUDWEED. (Welsh: *Edafeddog benddu.* E.) In watery places, especially where stagnant water has remained during the winter. A. Aug.

G. GAL'LICUM. (Stem branched, upright: flowers awl-shaped, tufted, axillary: leaves thread-shaped, revolute, sharp-pointed. E.)

Dicks. H. S.—(*E. Bot.* 2369. E.)—*Pluk.* 298. 2—*Pet.* 18. 12.

Whole *plant* cottony, but the cotton shorter than that of *G. germanicum* or *montanum*. *Stem* much branched. *Leaves* awl-shaped, half embracing the stem, about an inch long. Woodw. (*Receptacle* convex, tubercled. *Calyx*, scales green, downy, with a thin white border. *Florets* of the disk about three; of the circumference more numerous, all tubular and fertile. Sm. E.)

NARROW-LEAVED OR GRASS CUDWEED. *Filago Gallica.* Linn. Gravelly corn-fields. In sandy ground about Castle Haveningham, Essex, (not now to be found there. E.) Heaths, Derbyshire. Mr. Woodward. (Dry banks near Forfar; also near Newburgh, Fifeshire. Mr. D. Don. Hook. Scot. E.) A. July—Aug. E.)

G. (MIN'IMUM. E.) Stem upright, branched: (leaves spear-shaped, sharp-pointed, flat: E.) flowers conical, in axillary and terminal tufts.

(*E. Bot.* 1157. E.)—*Pet.* 18. 11—*H. Ox.* vii. 11. 3. *a.*—*Ger.* 517. 8—*Lob. Ic.* i. 481. 2—*Ger. Em.* 641. 9—*J. B.* iii. *a.* 159—*H. Ox.* vii. 11. 3. *b.*

(*Stems* very slender, erect, two to eight inches high, woolly; branched, chiefly from the first cluster of flowers, sometimes quite simple. *Leaves* erect, almost appressed, very small. *Flowers* small, three to six together in clusters, sessile, and sometimes solitary. *Calyx* downy, scales subulate. Grev. *Florets* yellowish. *Down* rough. *Receptacle* tubercled. E.)

LEAST CUDWEED. (Welsh: *Edafeddog leiaf*; *Digoll lwyd. G. minimum.* Ray. Bauh. Sm. Willd. Relh. Hook. Grev. *G. montanum.* With. Huds. Hull. and supposed to be *Filago montana* of Linnæus; but Smith observes that the real *F. montana* of Linnæus has leaves and flowers nearly double the size of our plant; that it is far more woolly, especially the scales of the calyx; that all the blossoms are crowded together, never solitary, and that it is not found in Britain. E.) Sandy and gravelly ground. A. July—Aug.

G. **GERMAN'ICUM.** (Stem erect, proliferous: heads globose, many-flowered, lateral and terminal: leaves acute: (calyx-scales bristle-pointed. Sm. E.).

(*Hook. Fl. Lond.*—*E. Bot.* 916. E.)—*Fl. Dan.* 997—*Sheldr.* 92—*Park.* 685. 3—*Pet.* 18. 10—*Fuchs.* 222—*J. B.* iii. *a.* 158—*Lonic.* i. 174. 3—*Matth.* 861—*Dod.* 66. 2—*Lob. Obs.* 255. 1, *and Ic.* i. 480. 2—*Ger. Em.* 642. 10—*H. Ox.* vii. 11. 10—*Pet.* 18. 9—*Ger.* 517. 9.

(*Stem* six to eight inches high, leafy, terminated by a globular head of small ovate *flowers*, from beneath which spring several horizontal branches, in a proliferous manner, each terminated by a similar head of flowers; hence the old Botanists applied the term "*Herba impia*" to this plant, as if the offspring were undutifully exalting itself above the parent. *Florets* yellow. Hook. Whole *herb* grey and cottony. E.)

COMMON CUDWEED. CHAFEWEED.* Irish: *Liah Luss Roid.* Welsh: *Llys y gynddaredd; Pen llwyd. G. Germanicum.* Huds. Relh. Willd. Sm. Hook. Grev. E.) *Filago Germanica.* Linn. Lightf. Barren meadows, pastures, and road sides. A. July—Aug.†

CONY'ZA.‡ *Recept.* naked: *Down* hair-like: *Calyx* tiled, roundish: *Florets* of the circumference trifid.

C. **SQUARRO'SA.** Leaves spear-shaped, downy, crenate: stem herbaceous: flowers in a corymb: scales of the calyx with their points recurved.

(*E. Bot.* 1195. E.)—*Blackw.* 102—*J. B.* ii. 1051. 2—*Matth.* 870—*Clus.* ii. 21. 2—*Dod.* 51. 2—*Lob. Obs.* 308. 3, *and Ic.* i. 574. 1—*Ger. Em.* 792—*Park.* 114—*Pet.* 18. 1—*H. Ox.* vii. 19. 23—*Fl. Dan.* 622.

Leaves oval-spear-shaped, irregularly serrated, woolly on both sides, decreasing in size upwards, those at the base of the flowering branches spear-shaped, or strap-spear-shaped, scarce perceptibly serrated. *Flowers* numerous. *Fruit-stalks* short, woolly. *Floral-leaves* spear-shaped, small, one on each fruit-stalk. *Calyx,* scales strap-spear-shaped, numerous, the lower green, the upper yellowish, points green and expanding. *Seeds* small, blackish, furrowed. *Down* sessile, as long as the calyx. Woodw. *Stem* two or three feet high; nearly cylindrical, reddish, rough with short woolly hairs. *Blossom* dusky purple, or yellowish. (The whole *plant* bitter, and slightly aromatic. *Receptacle* tubercled. E.)

PLOWMAN'S SPIKENARD. (Welsh: *Cadowydd; Meddyg Mair.* E.) Mountainous meadows and pastures and road sides in a calcareous soil. Woods in Norfolk in a clayey soil, very common. Sir J. E. Smith. At Force Forge, and at Hollow Oak in Furness Fells. Mr. Jackson. On the common near Pennybridge. Mr. Atkinson. (Plentiful about St. Vincent's Rocks, Bristol. Fl. Brit. Penmon, &c. Anglesey. Welsh Bot. At the foot of Knowle-hill, Brislington, near Bristol. Dr. C. Fox. About Corfe Castle, in the lanes about Marnhull, and under Hod Hill, Dorset. Dr. Pulteney. Holcombe lane side; and vale of Dudcombe, near Painswick. Mr. Oade Roberts. Box Hill, and Matlock. Mr. Winch.

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* (As being used to cure chafed flesh. E.)

† It is given to cattle that have the bloody flux; and has been tried with success in similar disorders of the human body.

‡ (From κόνυζα, i. e. *cuni-lago*: the leaves, according to Pliny, destroying gnats and fleas. E.)

Addington Hills, Surry. Mr. W. Christy. Road side between Warwick and Myton. About Mirables, Undercliff, Isle of Wight; and about Teignmouth. E.) Lilleshall Abbey, Shropshire. B. July—Aug.—Sept.*

ERI′GERON.† *Recept.* naked: *Down* hair-like: *Florets* of the circumference strap-shaped, very narrow, (numerous: *Cal.* tiled. Fl. Brit. E.)

E. CANADEN′SE. (Stem hairy, panicled, many-flowered: leaves spear-shaped, fringed: lower ones toothed. E.)

(*E. Bot.* 2019—*Fl. Dan.* 1274. E.)—*Bocc. Rar.* 46, *at p.* 86—*H. Ox.* vii. 20. 29—*Pet.* 16. 12—*Zanon.* 23. 1.

Stem firm, frequently crooked, much branched towards the top. *Leaves*, the lower oval, tapering into a leaf-stalk; those above spear-shaped, with distant serratures, slightly hairy on the upper surface, more so underneath; those at the base of, and on the branches, strap-spear-shaped, very entire, sessile. *Flowers* numerous. *Fruit-stalks* slender, branched and simple. *Calyx* outer scales short, the inner longer, strap-shaped, with a green line along the back, whitish and membranous at the edge. *Florets* very small. *Seeds* minute. *Down* sessile, simple, as long as the florets. Woodw. *Florets* in the centre, yellow; those in the circumference white, with a tinge of red. *Stem* one to two feet high. E.)

CANADA FLEA-BANE. Cultivated ground and on rubbish. (About London. Ray. Sunderland Ballast Hills. Mr. Weighell. Sandy ground below the bridge at Neath, Glamorganshire. Mr. Middleton, in E. Bot. E.) St. Vincent's Rocks, Bristol. A. Aug.—Sept.‡

E. ALPI′NUM. Leaves blunt, woolly underneath: stem with one or two flowers: calyx rather hairy.

(*E. Bot.* 464. E.)—*Fl. Dan.* 292—*Fl. Lapp.* 9. 3—*J. B.* ii. 1047, *right hand figure.*

Stems a finger's length, unbranched, supporting a single flower, scored, besprinkled with hairs. *Leaves* few, alternate, spear-shaped, green, nearly smooth above, set underneath with expanding hairs. *Calyx*, scales numerous, equal in length, spear-shaped; the outer scales broader, expanding, with longer hairs on both surfaces. *Florets* in the circumference white, as long as the calyx. *Petals* very numerous, strap-shaped, and entire. *Style* thread-shaped, white, acute, cloven. *Central florets* numerous, yellow; styles yellow, cloven, blunt. Fl. Suec. *Down* a reddish rust-colour. Sp. Pl. Linnæus seems to consider *E. alpinum* and *uniflorum*, as one species, observing that the former sometimes bears a panicle of white flowers, and the calyxes smooth. *Blossom* purple and yellow. (*Calyx* slightly hairy, not woolly as in *E. uniflorum*. *Seeds* bristly. Fl. Brit. E.)

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* (More particularly troublesome on converted heaths; the scythe is of little use in destroying it; dressings of clay or marl will soon cause this weed to disappear. Its presence denotes sterility. Sinclair. E.)

† (From ηρ, the spring, and γερον, an old man; alluding to its hoary and gray appearance in that season. E.)

‡ (The bark of this plant, after having undergone the process of soaking, may be manufactured into excellent paper; as stated by M. Losanne to the Agricultural Society of Turin.—The English name of *Flea-bane* is derived from its reputed power when burned, to destroy such vermin; and has been applied likewise to *Conyza squarrosa*, but more correctly to the present genus: and perhaps more especially to the plant of Dioscorides and Theophrastus, (*E. viscosum*), whose leaves interspersed with glutinous glands, and often purposely anointed with milk, attract and entangle the numerous insects which prove a sore annoyance in the south of Europe.* E.)

(Alpine Flea-bane. E.) Found by Mr. Dickson on wet rocks on Ben Lawers; (but first discovered in this Island by the Rev. Mr. Stuart of Luss, on Ben Lawers, and on Shuc and Lochain. Mr. Brown.
P. July. E.)

(The real *E. uniflorum* of Linnæus is reported to have been found also on Ben Lawers, and on rocks by the river Almond, near Lindoch, seven miles from Perth, by Mr. Don, but these two species still appear to be involved in ambiguity. Vid. Linn. Tr. x. 346. and E. Bot. 2416. We have now before us Ben Lawers specimens from Mr. Brown, and a note by that learned Botanist to the following effect. " I am nearly convinced that *E. alpinum* of Linn. as he himself suspected, is merely a variety of *E. uniflorum*. Our plant, which does not perfectly correspond with the account he gives of either, may possibly be an intermediate var. The *corollulæ* of the radius always purple ; the stem most frequently with only one flower, more rarely with two : the *pappus* never " *rufo-ferrugineus*," but greyish, though this is probably a variable circumstance. One specimen gathered in Ireland had the *pappus* of a very dilute ferruginous colour. Fl. Dan. 292. is certainly this plant, though the specimen there figured exceeds in size our native ones very considerably." Respecting *E. alpinum* and *uniflorum*, Prof. Hooker observes, " Smith gives to *E. uniflorum* the character of ' florets of the ray erect,' so they are frequently in *E. alpinum* ; and as I can see no other mark either in Smith's figure or in the specimens that I have received from the discoverer Mr. G. Don, I feel little hesitation in uniting the two." E.)

3. A'CRE. (Stem racemose: peduncles mostly single-flowered: leaves lanceolate-tongue-shaped : sessile. E.)

Curt.—(*E. Bot.* 1158. E.)—*J. B.* ii. 1043. 2—*Dod.* 641. 4—*Ger. Em.* 484. 10—*Park.* 126. 6—*Pet.* 16. 4—*Col. Ecphr.* ii. 26. 2—*H. Ox.* vii. 20. 25.

Stems six to eighteen inches high, somewhat angular, hairy, often purple. *Leaves*, the lower oval, tapering down into a leaf-stalk ; the upper spear-shaped, the uppermost strap-shaped, hairy on both sides, but mostly at the edge, very entire, often waved at the edge. *Calyx* scales unequal, awl-shaped, hairy. *Florets* of the circumference purple, a little longer than those of the centre ; florets of the centre yellow. *Down* sessile, simple, yellow, as long as the florets. Woodw. *Fruit-stalks* supporting from one to three flowers. (*Seeds* rough. E.)

Lue Flea-bane. (Welsh : *Ammrhydllwyd rhuddlas*. E.) Dry meadows and pastures in a calcareous soil. Narford, Norfolk ; (and on old walls at Ely ; E.) Mr. Woodward. St. Vincent's Rocks, Bristol. Lime Rocks, Dudley. Lilleshall Abbey, Shropshire. (Between Llanerch Bridge and the village of Dymerchion, Flintshire ; and about Denbigh Castle, in which stations it was pointed out to the Editor by Mr. Griffith.—In a copse a little to the east of Bradbury ; in Langton Copse, near Blandford. Pulteney. On Newborough Common, Anglesey. Welsh. Bot. Ballast hills of Tyne and Wear ; Hartlepool, Durham ; Ryegate Hill, Surry. Mr. Winch. On a wall at Hords Park, and by the side of the turnpike road opposite to Faintree House, near Bridgnorth ; At Allesley and Meriden, Warwickshire. Bree, in Purton. Kingsgate, near Ramsgate. Mr. W. Christy. Spoonbed Hill, Painswick. Mr. Oade Roberts. On old stone walls at the Rookery, and other like situations, in the parish of Brislington, near Bristol; and by the road side two or three miles from Clevedon, Somersetshire, approaching from Bristol. E.)

B. July—Sept. (also early in Spring. Fl. Brit. E.)

TUSSILA'GO.* *Recept.* naked: *Down* hair like: *Calyx* tumid at the base; scales equal, as tall as the surface of florets, somewhat membranous: (*Seed* obovate, compressed. E.)

T. **FAR'FARA.**† Stalk single-flowered, tiled: leaves somewhat heart-shaped, angular, finely toothed.

Curt.—(*E. Bot.* 429. E.)—*Kniph.* 6—*Walc.*—*Ludw.* 50—*Blackw.* 204—*Fl. Dan.* 595—*Woodv.* 13—*H. Ox.* vii. 12, *row* 1. 1, *f.* 1—*Dod.* 596. 1, *and* 2—*Lob. Obs.* 320. 1 *and* 2, *and Ic.* i. 589. 1 *and* 2—*Ger. Em.* 811—*Ger.* 666—*Park.* 1220—*Pet.* 17. 8 *and* 7—*Fuchs.* 140—*J. B.* iii. *h.* 563 3—*Trag.* 418—*Matth.* 844—*Lonic.* i. 226. 2.

Root creeping (far and wide. E.) *Leaves* appearing as the flowers are going off, with several blunt lobes sharply toothed, green above with reddish veins, white and cottony underneath, the cotton easily rubbing off. *Leaf-stalks* long, reddish brown. *Stalks* numerous solitary or in clusters, three to five inches high, lengthening after flowering, cottony, clothed with spear-shaped scales embracing the stalk, of a green mixed with brown. *Flowers* while in blossom upright, after flowering hanging down, but when the *down* of the seeds expands becoming upright again. *Calyx,* scales strap-shaped, reddish brown. *Blossoms* yellow. *Florets of the circumference* very narrow, in two or three rows, as long as the calyx, expanding. *Florets of the centre* tubular, swelling upwards; clefts five, spear-shaped, bent back. *Summit* before the anthers have discharged their pollen covered by them, club-shaped and simple, but afterwards lengthened beyond them. *Down* sessile, longer than the calyx. Woodw.

COMMON COLT'S-FOOT. (Irish: *Ahain.* Welsh: *Alan bychan; Carn yr ebol.* Gaelic: *An gallan gainbhich; chluas-liath.*

Pastures and moistish places, in moist, stiff, clayey soil, and on limestone rubbish. P. March—April.‡

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* (From *tussis*, a cough, the plant being useful in allaying pectoral disorders. E.)

† *Farfarus,* from its leaves resembling those of the White Poplar, (so called by the ancients) as

——— "Eos prosternebam ut folia *Farfari.*"—Plaut. Pæn. E.)

‡ It is the first plant that vegetates in marl or limestone rubble, (and is very injurious to ploughed lands. Holdich observes that every part of the root will produce a plant, and though buried to the depth of a yard or more, it will vegetate, send up a stem to the surface, and spread with astonishing rapidity. It must never be suffered to produce flowers, or fully expand its leaves. Draining, paring, and burning, followed by a naked summer fallow, with hoeing in due season, will completely eradicate this nuisance. E.) The downy substance on the under surface of the leaves, wrapped in rag, dipped in a solution of saltpetre, and dried in the sun, makes the best tinder. The leaves are the basis of the British Herb Tobacco. (Pliny records its being used for smoking in ancient times as a remedy for obstinate coughs, and recommends both the roots and leaves. E.) They are somewhat austere, bitterish, and mucilaginous to the taste. They were formerly much esteemed in coughs and consumptive complaints; and perhaps not without reason, for Dr. Cullen found them of considerable service in scrophulous cases; he gave a decoction of the dried leaves, which succeeded where sea water failed, Mat. Med. p. 458.—Fuller relates the case of a girl, with twelve

T. petasi'tes. (Panicle crowded, ovate-oblong: leaves heart-shaped, unequally toothed, with the lobes approximate, downy beneath. E.)

Curt. 134—(*E. Bot.* 431. E.)—*Blackw.* 222—*Fl. Dan.* 842—*Clus.* ii. 116. 1 *and* 2—*Dou* 597—*Lob. Obs.* 321. 2 *and* 3, *and Ic.* i. 591—*Ger. Em.* 814—*Pet.* 15. 12 *and* 11—*Ger.* 668—*H. Ox.* vii. 12. 1, *f.* 3—*Park.* 419. *f.* 3—*Fuchs.* 645—*J. B.* iii. 566. 2—*Trag.* 415—*Lonic.* i. 226. 1—*Matth.* 845.

(*Root* much creeping. *Leaves,* which come off after the flowers, excessively large, all radical, on long foot-stalks. *Scape* a span high, thick, and scaly, with lanceolate spreading bracteas. *Flowers* purplish. Some plants have all the *florets* with perfect *germens,* in which case the stigma is deeply cleft and linear, and the anthers are imperfect and not united; *others* have imperfect germens, when the *stigma* is very much incrassated and ovate, tuberculated, and very slightly notched, whilst at the same time the anthers are perfect, united, or syngenesious, purple, with white *pollen.* The *former* with perfect germens, producing *no seed,* have almost universally gone by the name of *T. hybrida,* and to the *latter* the name of *T. Petasites* has usually been confined. As these plants frequently grow separate, the fruit is rare; but nature has made ample amends, and by the long creeping roots this species is multiplied, and proves very destructive to pasture lands. Hook. E.)

(The *fertile* plant, (as first suggested in England by Smith, and on the Continent by Ehrhart, though the former learned author deems it more correct to consider it as "a casual variety in which the fertile or seed-bearing organs predominate," rather than as the proper fertile plant), *T. hybrida,* of authors, figured in Hook. Fl. Lond. 129. E. Bot. 430. Dill. Elth. p. 309. t. 230,) is this minutely described by Prof. Hooker. "*Root, leaves, flower-stalk, thyrsus, bracteas,* and *involucre,* precisely similar to those of the *barren* state of *T. Petasites,* except in the *thyrsus* being more elongated. *Flowers* nearly all fertile, very few barren. *Fertile florets* slender, tubular, of a purplish rose-colour, slightly incrassated above, the limb quinquifid, erecto-patent. *Barren-florets* very few, rather shorter and broader than the fertile ones, thickened upwards, limb quinquefid, patent. *Stamens* inserted above the middle of the carolla. *Filaments* white, short. *Anthers* oblong, furnished with, an appendage at the extremity, purplish. *Pollen* white. *Germen* ovate, smooth, abortive. *Style* filiform, white, a little longer than the corolla. *Stigma* remarkably incrassated, minutely tuberculated, acute and bifid at the extremity. *Anthers* none. *Germen* ovate, striated. *Style* somewhat longer than the corolla, filiform, white *Stigma* slightly incrassated, bifid. *Pericarp* ovate, striated brown, terminated by a white sessile, simple, scabrous pappus." E.)

(*Long-stalked Colt's-foot* or *Butter-bur.* *T. Petasites,* fœm. As the first described is the sterile; so this is the fertile state of the same plant, and not a distinct species, as generally designated under the name of *T. hybrida.* It grows in similar situations, but is less abundant. E.)

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scrophulous sores, who was cured by drinking, daily, as much as she could, for above four months, of a decoction of the leaves made so strong as to be sweetish and glutinous. Med. Gymn. p. 91. Goat and sheep eat it. Cows are fond of it. Horses and swine refuse it. Linn. It may be destroyed by cutting off the crown of the root in March. Mr. Pitt. (The under surface of the leaves of this and the following species are frequently infested with the parasitic fungus *Lycoperdon epiphyllum,* hence designated *Æcidium Tussilaginis.* E.)

BUTTER-BUR. PESTILENT-WORT. (Irish: *Pubboll.* Welsh: *Dail y tryfan.* Gaelic: *An gallan mor.* E.) Moist meadows and banks of rivers, not uncommon. Dishley mill: moist meadows near Loughborough, Leicestershire. Dr. Arnold. Very common about Manchester, the banks of the Irwell are crowded with it. It will shoot up from four inches to four feet during the time of flowering. Mr. Caley. (Near the river Wherf between Ilkley and Skipton. Teesdale. Near Leeds, plentifully. Rev. W. Wood. Near Sleningford; also Magdalene Banks, near Tanfield. Rev. J. Dalton. Plentifully in the Mill-yard at Lenton, in the road to Woollaton Hall, Nottinghamshire. Deering. Banks of Tyne, at the foot of Scots Wood Dean. Winch Guide. On a Willow bed at Hoo-mill, Warwickshire. Purton. E.) P. March—April.*

SENE'CIO.† *Recept.* naked: *Down* hair-like, long: *Calyx* conical, double; scales shrivelled at the ends.

(1) *Florets all tubular.* (S. viscosus.)

S. VULGA'RIS. Leaves winged-indented, embracing the stem: flowers scattered.

Curt.—(*E. Bot.* 747. E.)—*Kniph,* 6—*Fl. Dan.* 513—*Blackw.* 132—*Walc.*—*Trag.* 285—*Dod.* 641. 2—*Matth.* 1132—*Lonic.* i. 96. 2—*Lob. Obs.* 112. 2, *and Ic.* i. 225. 2—*Ger. Em.* 278. 1—*Park.* 671—*H. Ox.* vii. 17. 1—*Pet.* 17. 5—*Ger.* 217. 2—*Fuchs.* 286.

Calyx, scales at the base spear-shaped, purplish black about one third of their length. *Blossoms* yellow, terminal. (*Stem* six to twelve inches high, upright, branched, leafy, almost panicled, angularly-cylindrical, nearly smooth, *Leaves* alternate. *Stigma* cloven in two, at length protruding. *Seeds* furrowed, pubescent. *Down* sessile, rough. *Receptacle* tumid, dotted, smooth. Fl. Brit. E.)

COMMON GROUNDSEL. (SIMSON. Welsh: *Grëulys; Penfelen fenyw.* Gaelic: *Am bualan*, E.) Cultivated ground, rubbish, and court yards. A. April—Sept.‡

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* The roots abound with a resinous matter. They have a strong smell and a bitterish acrid taste, (but have long lost their credit for the medicinal powers which once gave the plant a name. E.) Horses, cows, goats, and sheep eat it. Its large leaves, (equalling a hat in circumference, E.) afford shelter from showers to poultry and other small animals, Linn., and are hollowed like a bonnet, by the Greeks called πετασος, whence the trivial name. The early flowering of this herb induces the Swedish farmers to plant it near the bee hives, (but, however productive it may be of honey, its polypus-like propensity should deter from introducing it unwarily. Curtis relates that a piece of Butter-bur root only two inches long, and the thickness of the little finger, after having been planted eighteen months was dug up, when it appeared that many shoots had extended six feet, and penetrated two feet in depth; the whole weighed eight pounds. E.)

† (Derived from *senex*, an old man; alluding to the hoary appearance as exhibited in *S. tenuifolius.* E.)

‡ A strong infusion of the plant acts as an emetic. The bruised leaves are a good application to boils. The seeds are very acceptable to linnets and goldfinches when confined in cages. Cows are not fond of it. Goats and swine eat it. Horses and sheep refuse it. Linn.—A horse eat it. St. (*Agrostis exclamationis*, *Arctia villica* and other insects feed upon it. This is one of the most troublesome of the underling weeds which infest arable lands and gardens, and generally increase from negligence. The remedy is obviously to fallow and practice more careful husbandry. Dr. Swediaur recommends this plant as an anthelmintic, and the juice is given internally to discharge bots from horses. E.)

(2) *Strap-shaped florets in the circumference, revolute.*

S. VISCO'SUS. Leaves wing-cleft, viscid; outer scales of the calyx loose, hairy, nearly as long as the inner.

E. Bot. 32—*Dill. Elth.* 258. 336—*J. B.* 1042.

In appearance and size resembling *S. vulgaris*, but clammy all over with hairs which secrete a viscid liquor. *Leaves* in mountainous situations with a leprous scurf underneath. *Fruit-stalks* lateral, with two and three flowers. *Calyx*, the scales at the base as long as the tube, as it were dead at the ends. Linn. *Rays* sometimes wanting. Hall. *Stems* taller and stronger; *leaves* more divided; *flowers* larger; *fruit-stalks* longer, the upper forming a kind of broad-topped spike; *seeds* longer, and more deeply furrowed; and the *down* longer than in *S. vulgaris*. Woodw. *Blossom* yellow. The hairs on the calyx and on every other part of the plant at once distinguishes this from the *S. vulgaris*, even though the strap-shaped florets of the circumference should be wanting. (*Stem* a foot high or more, much branched. Whole *plant* fetid. E.)

CLAMMY GROUNDSEL. Sandy ground. Fen banks in the Isle of Ely. Ray. Waste ground near towns and villages, as the Leven on the coast of Fife near the salt works, and at Dysart, near the pier, and at Charles Town. The lime-works of Lord Elgin. Lightfoot. King's Park, Edinburgh. Mr. Yalden. (About the chalk-pits at Dartford. Sir J. E. Smith. Plentiful a little eastward of Swansea Ferry; and at Aldborough, near the beach. Mr. E. Forster, jun. North Moor lane, near Easingwold. Rev. Archdeacon Pierson. On Streatham Common, Surry. Martyn. Lane between Benwell and Newcastle upon Tyne. Mr. Winch. In a gravel pit at Ditchingham, Norfolk. Mr. Woodward. Nunnery Walks; Brampton; Keswick. Hutchinson. E.) A. Aug.—Dec.

S. SYLVAT'ICUS. Leaves sessile, wing-cleft, finely toothed: stem branching into a corymb, upright: (outer calyx short, smooth. E.)

(*E. Bot.* 748. E.)—*Rupp. Jen. Hall.* 3, *at p.* 177—*Dill. Elth.* 258. 337—*Dod.* 641. 1—*Lob. Ic.* i. 226. 2—*Ger. Em.* 278. 2—*H. Ox.* vii. 17. 2—*Pet.* 17. 5—*Fl. Dan.* 869—*Ger.* 217. 1.

Stem taller and firmer, though more slender than that of *S. viscosus*. *Leaves* narrower and more finely divided, frequently clammy in a hot sunny situation, but not so much as those of *S. viscosus*. *Fruit-stalks* much more branched. *Flowers* more numerous, much smaller. *Seeds* shorter and broader. *Down* shorter, Woodw., strong scented. *Stem* two to three feet high, with a fine woolliness of short, tapering, zigzag hairs, brittle, branching from the bottom. *Branches*, the upper rising nearly to the same height. *Leaves* somewhat woolly, with scattered short hairs, tapering, but not tipped with glands. *Fruit-stalks* somewhat cottony. *Calyx* conical, somewhat woolly; scales at the base awl-shaped, two or three, dead at the ends, thrice as small as those of the cup. *Bloss.* yellow. St. (*Stem* three feet high. E.)

UPLAND GROUNDSEL. (Welsh: *Penfelen fynyddawl.* E.) *S. viscosus* β Huds. Banks and mounds of earth in dry upland soil, dry heaths, and sandy ditch banks. Ruddy Hill, near Mangots-field, Gloucester. Rev. G. Swayne. (Anglesey. Welsh Bot. Near Betchworth Park, Surry. Mr. Winch. Alcester Field, between Alcester Lodge and New Inn. Purton. Figget Whins, and on the south side of Blackford-hill. Mr. Neill. Grev. Edin. Lanes about Birmingham. E.) A. July.

(S. liv'idus. Leaves clasping the stem, spear-shaped, pinnatifid and toothed: scales of the calyx short, with acute points, not discoloured.

E. Bot. 2515.

Most resembling *S. sylvaticus*, but the essential marks of distinction are the dilated base of the leaves, which embraces the stem, and the taper-pointed scales at the base of the calyx, which are not blackened and abrupt at the tip, as in every other species. The depth of the segments of the leaves is liable to variation. E. Bot.

Green-scaled Groundsel. On some enclosed moor land at Sneaton, near Whitby. Mr. Middleton. In the woods of Blaize Castle, near Bristol. On hills between Norwich and Thorpe. Sir J. E. Smith. On the hill of Tenhaven, Angus-shire. Mr. G. Don. Hook. Scot. About Newcastle a common weed. Mr. Winch: who is inclined to consider it "merely a vigorous plant of *S. sylvaticus*." E.)

(3) *Strap-shaped florets in the circumference expanding; leaves wing-cleft.*

(S. squa'lidus. Radius spreading, longer than the calyx: its florets elliptical and entire: leaves pinnatifid, their segments distant, somewhat linear.

E. Bot. 600.

At first sight much like var. *S. Jacobæa.* *Stems* upright, branched, somewhat hairy. *Leaves* embracing the stem, nearly smooth, flat, rather fleshy, often purplish beneath. *Flowers* solitary, at the end of terminal, straggling, bracteated corymbose stalks. *Calyx* smooth, almost hemispherical, its outer scales few and small. *Inner florets* very numerous. Those of the radius broad, spreading, elliptical, entire, of a bright golden yellow, at length reflexed. The *plant* smells like Tansy or Mugwort.

Inelegant Ragwort. On almost every wall in and about Oxford: whence we have been favoured with specimens by Dawson Turner, Esq.;—but a doubtful aboriginal. A. June—Oct. E.)

S. tenuifo'lius. Leaves winged: segments strap-shaped: lower-leaves on long leaf-stalks: flowers forming a corymb: stem upright. Jacq.

Jacq. Austr. 278—(*E. Bot.* 574. E.)

Stem unbranched, one to three feet high, scored with ridges, firm, thick as a quill, entirely covered by leaves, reddish, but clothed with cobweb-like cotton. *Calyx* green, not dead at the ends. *Leaves* either smooth on both sides, or clothed underneath with a cob-web-like cotton. *Lower-leaves* on long leaf-stalks; *upper-leaves* nearly sessile and upright. *Segments* strap-shaped, pointed; mid-rib underneath prominent, long, distant, very entire, rarely toothed; edges rolled back. Jacq. (*Blossom* deep yellow. *Seeds* hairy. E.)

The figure of Jacquin is a very exact representation of it as it generally appears in the north of England. It but seldom occurs with us in the state represented in Fl. Lond. and seems then to be a variety occasioned by a damper and more shady situation. Mr. Wood.

Var. 2. **Plant but little cottony; lower leaves sessile; segments broader.**

Curt. 294—*Pet.* 17. 3—*Walc.*

Stem angular, furrowed. *Leaves* sessile, hairy, particularly underneath; the lower rough to the touch; the upper less hairy; segments strap-yellow and toothed at the ends. *Calyx*, scales not dead at the ends, but shaped, and woolly, the outer strap-shaped, fleshy, the inner the same, but edged with a broad membranous border. The leaves in this variety do not stand upright as in the preceding, nor do they so effectually hide the stem; the segments are much broader, and the hairiness is not such as to give a hoary appearance to the plant. Upon the whole, its habit is so different, that had there not been a general coincidence in opinion, that cultivation alone is sufficient to occasion the differences pointed out, I should have considered them distinct.

Hoary Groundsel. (Welsh: *Greulys lledlwyd culddail. S. tenuifolius.* Jacq. E.) *S. erucifolius.* Huds. Curt., but not of Linnæus as I understand from Dr. Atzelius; though he observes that all the synonyms, except *H. Scan.* attributed to that, really belong to our plant. Woods and hedges. Bath Hills, near Bungay. Mr. Woodward. Baydales, Darlington. Mr. Robson. Both varieties found near Blymhill, Shropshire, by the Rev. S. Dickenson. (Road-side between Talwrn and Ceint, Anglesey. Welsh Bot. E.) P. Aug.

S. JACOBÆ'A. Leaves lyre-shaped, almost winged: segments finely jagged: stem upright.

Kniph. 6—*Fl. Dan.* 944—(*E. Bot.* 1130. E.)—*Matth.* 1133—*Clus.* ii. 22. 1—*Dod.* 642—*Lob. Obs.* 113. 2, *and Ic.* i. 227 1—*Ger. Em.* 280. 1—*Park.* 668. 1—*Pet.* 17. 1—*Fuchs.* 742—*J. B.* ii. 1057. 1—*Trag.* 287—*Lonic.* i. 96. 3—*H. Ox.* vii. 18. 1—*Ger.* 218. 1.

(*Stem* very tough, two to three feet high, branched, smooth, or somewhat cottony. *Leaves* numerous, deep green and shining or slightly cottony; *lower ones* with broad segments; *upper ones* with mostly linear divisions. *Flowers* forming a wide corymb, large, bright, deep yellow. *Involucre* (calyx) smooth, short, cylindrical. Grev. *Pericarps* of the *circumference* hairy, those of the *disk* smooth. Hook. *Herb* strong smelling when bruised. E.)

Common Ragwort. Seggram. Canker-weed. Staggerwort. St. James's-wort. Swine's Cress. (Scotch: *Elshinder.* Irish: *Pfullan beih bulkisan.* Welsh: *Curnedd felen wrryw.* Gaelic: *Bualan.* E.) Meadows, pastures, and road sides. P. July.*

Var. 2. Flowers without rays.

In great plenty in gravel on the sea shore, three or four miles from Drogheda, scarcely one in a thousand being radiated. Sherard in R. Syn.

Var. 3. Flowers without rays; whole plant hoary with dense cottony substance.

Marazion Marsh, Cornwall.

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* (This plant has been recommended in a bruised state as an application to cancers. Internally, by Simon Pauli, against dysenteries. E.) If it be gathered before the flowers open, and used fresh, it dyes wool of a full green, but the colour is apt to fade. If woollen cloth be boiled in alum water, and afterwards in a decoction of the flowers, it takes a beautiful deep yellow. Horses and sheep refuse it. Cows are not fond of it. Linn. (Often entirely devoured by the black and yellow-ringed caterpillars of *Phalæna Jacobæa.* Sm. *Andrena fulvicrus*, and *Nomada flavopicta* are likewise found upon it; and *Ceratina cærulea* in the flowers. E.) Horses and Cows eat it when young.

S. AQUAT'ICUS. Leaves toothed, those at the root egg-shaped, of the stem wing-cleft; outer segment largest. Huds.: (calyx hemispherical. E.)

(*E. Bot.* 1131. E.)—*J. B.* ii. 1057. 3—*Pet.* 17. 2—*Fl. Dan.* 784—*Clus.* ii. 23. 1—*Ger. Em.* 280. 3.

Leaves wing-cleft, with some small wings at the base, and a very large one egg-shaped, scolloped, terminal, smooth. *Fruit-stalks* irregularly branching, with numerous awl-shaped scales. Woodw. (*Seeds*, both of disk and radius, smooth. Sm. *Flowers* larger than in the preceding; not so numerous. *Rays* of the circumference broader. *Blossom* yellow. In dryer stations this plant becomes very slightly woolly. E.)

Liable to vary much in its foliage. I have some specimens in which the leaves are wing-cleft for more than half their length from the base; others in which the leaves may be most properly considered as entire, with one or two pair of wings on the leaf-stalks, and others again in which the upper and lower leaves have no wing-cleft segments; hence I am induced to believe that this does not specifically differ from *S. Jacobæa*, the latter growing in dry uplands, the former in moist meadows. Hudson's *S. aquaticus* certainly corresponds with the Linn. Sp. char. of the *Jacobæa*, which can hardly be said of the upland plant which we call *Jacobæa*.

WATER GROUNDSEL. (MARSH RAGWORT. (*S. aquaticus*. Huds. Willd. Sm. Hook. Grev. *S. Jacobæa* γ. Lightf. Welsh: *Penfelen y gors*. E.) Ditches and watery places, and moist meadows and pastures.
P. July—Aug.

(4) *Strap-shaped florets in the circumference expanding; leaves undivided.*

S. PALUDO'SUS. (Rays toothed: flowers corymbose: Sm. E.) leaves sword-shaped, acutely serrated, somewhat cottony beneath: stem quite straight, (hollow. E.)

(*E. Bot.* 650. E.)—*Fl. Dan.* 385—*Ger.* 347—*Ger. Em.* 483. 6—*Pet.* 16. 8—*Thal.* 3—*J. B.* ii. 1063. 3—*Park.* 1232—*H. Ox.* vii. 19. 22.

Stem two to five feet high, simple. *Leaves* very long, strap or spear-shaped, losing their woolliness by age. *Umbel* flat-topped. *Flowers* two inches broad. *Calyx* conglutinated. Hall. *Blossom* yellow, (large. *Stem* clothed with a loose cottony substance. *Seeds* hairy. *Receptacle* slightly so. E.)

BIRD'S-TONGUE GROUNDSEL. (GREAT FEN RAGWORT. E.) Marshy ditches and their banks in the Isle of Ely, near Stretham Ferry, but not common. (In Lakenheath fen, near Wangford, Suffolk. Rev. Mr. Hemsted. On the banks of ditches near Braford water, half a mile from Lincoln. Rev. Mr. Woolaston. Fl. Brit. E.) P. (July. E.)—Aug.

S. SARACEN'ICUS. (Rays nearly entire: Sm. E.) flowers in a corymb: leaves spear-shaped, serrated, almost smooth: (stem solid. E.)

Jacq. Austr. 186—*Kniph.* 4—(*E. Bot.* 2211. E.)—*Ger.* 350—*Fuchs.* 728—*J. B.* ii. 1063. 2—*Trag.* 487—*Lonic.* i. 241. 3—*Dod.* 141. 1—*Lob. Obs.* 159. 3, *and Ic.* i. 299. 2—*Ger. Em.* 429.

Distinguishable by its broad leaves, size, and root which creeps very much. Linn. *Leaves* rather toothed than serrated. *Floral-leaves* very slender; as long or longer than the partial fruit-stalk. Strap-shaped florets about seven or eight. *Flowers* yellow. (*Ray* with broad ligulate florets. *Stem* three to five feet high, smooth. *Leaves* alternate, sessile. *Calyx* slightly cottony; scales at the base spear-shaped. *Seeds* smooth. E.)

Broad-leaved Groundsel or Ragwort. Moist meadows and pastures and ditch banks, (very uncommon. E.) Between Wells and Glastonbury, and near Shepton-Mallet, and elsewhere in Somersetshire. Bobart. Near Halifax. Mr. Newton. Fields about Salkeld. Ray. About Clapham and Ingleton, Yorkshire. Hudson. In the hedges near Longtown, and on the side of the river below Carlisle. Mr. Jackson. (Near Settle. Mr. J. Windsor. Brawsholme, nineteen miles from Preston. Rev. J. Rudd; near Chester. Mr. Okell; in a watery lane near Preston Hall, between Kirkby Lonsdale and Kendal. Sir J. E. Smith. E. Bot. (On a small island of the Clyde a little below Bothwell-bridge. Dr. Brown. Border of a field near Mugdock castle, Glasgow. Hopkirk, in Hook. Scot. In a meadow at Abenbury, near Wrexham, close to the side of the brook called Llender, in the holding of Robert Ellis, tenant of Tyn y Coed; also on the banks of the river Dee above Eaton Boat, Cheshire. Mr. Griffith. E.) P. July—Aug.[*]

ASTER.[†] *Recept.* naked: *Down* hair-like; radiating florets more than ten: *Calyx* tiled; the lowermost scales expanding.

A. tripolium. (Stem smooth, corymbose: E.) leaves strap-spear-shaped, fleshy, smooth, three-ribbed: calyx scales blunt, somewhat membranous.

(*Hook. Fl. Lond.* 196. E.)—*E. Bot.* 87—*Fl. Dan.* 615—*Gmel.* ii. 80. 2—*J. B.* ii. 1064. 2—*Ger.* 333—*Dod.* 379—*Lob. Obs.* 157. 4, *and Ic.* i. 296. 1—*Ger. Em.* 413. 1—*Park.* 674—*Pet.* 17. 10—*Lob. Obs.* 158. 1, *and Ic.* i. 296. 2—*Ger. Em.* 413. 2—*Pet.* 17. 11—*H. Ox.* vii. 22. 36.

Stems one to three feet high. *Flowering-branches* from the bosom of the upper leaves. *Fruit-stalks* branched. *Calyx* scales in two or three unequal rows, short, egg-shaped, scored, green and brown, with reddish brown anthers. *Florets* of the circumference spear or strap-shaped, pointed, frequently cloven at the point. Woodw. *Flowers* with somewhat of a sweetish scent, (and varying much in degree of colour, whence the specific name. E.) *Florets* of the circumference twenty-one to twenty-three, of a bluish lilac, (sometimes white. E.) *Florets* of the centre fewer, about eighteen, (deep yellow. *Down* of a reddish colour. *Plant* herbaceous, slightly glaucous, smooth, greatly varying in size. *Leaves* coriaceous, very entire. Lowermost *scales* of the *calyx* less decidedly spreading than in other species. E.)

Sea Starwort. (Welsh: *Serenllys y morfa.* E.) Salt marshes on the sea coast, in muddy soil, and in salt marshes in the inland parts of the kingdom, as near Shirley Wich, Staffordshire; in a meadow between the Trent and the canal. Dr. Stokes. West side of Walney Island. Mr. Atkinson. Shore of the Avon, a little above the Hotwell, Bristol, between the walk and the river. (Dickenson's Dingle and Garston, near Liverpool; Brading, Isle of Wight. Dr. Bostock. Frequent in the salt marshes of Dorset. Pulteney. In salt marshes on Tyne and Wear, not uncommon. Mr. Winch. Banks of the Thames, between Richmond and Kew. Mag. Nat. Hist. vol. i. 83. Sea mill-dam, Burntisland bay; Inverkeithing bay. Mr. Neill. Grev. Edin. Shores of Anglesey. Welsh Bot. On the south shore of the Teign near Combe Cellars. B. Botfield, Esq.; and in small bays opposite, near to Brookfield House. E.) P. Aug.—Sept.[*]

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[*] *Phalæna fuliginosa*, *Jacobæa*, and *pronuba*, live upon the several species. (This plant is reported to have been valued as a vulnerary by the Saracens, and is certainly an astringent of no mean power. E.)

[†] (From Ἀστηρ, a star; the flower assuming the stellate, or radiated form. E.)

Var. 2. All the florets tubular.

Pet. 17. 12.

About Bristol, frequent. Ray.

(A foreign species, *A. fragilis*, from North America, is reported by Mr. Winch to have become naturalized on an island at the junction of North and South Tyne; and may possibly, at some future period, like many other plants fortuitously introduced, obtain admission into the British Flora. E.)

SOLIDA'GO.[†] *Recept.* naked, pitted: *Down* hair-like: *Florets* of the circumference about five: *Calyx*, scales tiled, laid close.

S. VIRGAU'REA. (Stem serpentine, angular: leaves mostly sessile, partly serrated: flowers in crowded, downy panicles. E.)

Var. 1. Stem branched; leaves strongly serrated.

E. Bot. 301—*Ludw.* 150—*Sheldr.* 63—*Blackw.* 169—*Ger.* 348. 2—*Tabern.* 1260—*Pet.* 16. 10—*Dod.* 142. 2—*Lob. Obs.* 159. 2, *and Ic.* i. 299. 1—*Ger. Em.* 430. 2—*H. Ox.* vii. 23, *row* 1. 4.

Var. 2. Stem branched; leaves indistinctly serrated.

Fl. Dan. 663—*Kniph.* 7—*Matth.* 1006—*Dod.* 142. 1—*Lob. Obs.* 159. 1, *and Ic.* i. 298. 2—*Ger. Em.* 430. 1—*Ger.* 348. 1—*Pet.* 16. 9—*H. Ox.* vii. 23. 20.

From (six inches, E.) to four feet high. Lower *leaves* oval-spear-shaped, tapering into leaf-stalks, distantly serrated, but towards the point almost entire, rough, slightly hairy, dark green above, sea green underneath, with numerous reticulated veins; the upper alternate, nearly sessile, spear-shaped, entire, or nearly so. *Flowering-branches* axillary, the lower shorter, the upper longer than the leaves, with six to eight flowers on branched fruit-stalks. *Flower-scales* one or two on each fruit-stalk. *Calyx*, scales unequal, spear-shaped, with a green line along the back, and whitish, shining, membranous edges. *Seeds* brown, convex on one

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[*] Goats and horses eat it. Cows and swine refuse it. Sheep are not fond of it. Linn. May it not when growing in an inland situation, be depended on as a proof of the existence of salt springs? St. (It is not unfrequently gathered and sold for samphire, either by mistake, or from its being collected without hazard; but it is supposed not to possess the like detersive qualities. Called *Tripolium*, because, according to Dioscorides, the flower changes its colour thrice in one day; but no such phenomenon is observable in our climate. E.)

[†] (From *solidando vulnera*, on account of its reputed efficacy in healing wounds. E.)

side, flat on the other, hairy the whole length, nearly as long as the calyx. Woodw. *Stem, leaves, calyx,* and tubular parts of the *florets* thick set with very short, opaque, white, bristly hairs. *Calyx* within of a silvery white, the outer scales much shorter. • *Florets* of the centre, segments reflexed: of the circumference six to eight, reflexed, with four or five faint longitudinal scores, and three or four teeth at the end. *Blossom* yellow.

Common Golden-rod. Woundwort.[*] (Welsh: *Eurwialen*; *Melyneuraidd.* E.) *S. Virga-aurea.* Hort. Cliff. Woods, hedges, heaths, copses. P. Aug.—Sept.[†]

Var. 3. Stem serpentine, unbranched; leaves spear-shaped; flowers in a spike-like terminating bunch.

Mountains near Kendal. Mr. Gough.

Var. 4. Stem straight.

Dill. Elth. 306. 393.

(Three to seven inches high; *stem* straight, unbranched; *leaf-stalks* as long as the spear-shaped leaves. These plants are so variable in size, and other more proper characteristics; that it is most difficult to determine species and varieties. E.)

Welsh-golden-rod. (*S. Cambrica.* Huds. With. Hull. Ait. Willd. *S. virgaurea* γ. Sm. E.) Pastures on the top of y Glyder Mountain, in Wales. Llwyd. Mountains about Llanberris, and on those of Yorkshire and Westmoreland. Hudson. Llyn y Cwm, near Snowdon. Pennant. On the rocky precipice on the summit of Ingleborough, to the north-west. Mr. Woodward. Near Kendal. Mr. Gough. (On rocks at Winch Bridge. Teesdale Winch Guide. E.) P. July.

S. lappon'ica. Stem straight, unbranched: root-leaves egg-shaped, on bordered leaf-stalks: stem-leaves spear-shaped, sessile: flowers in a spike-like terminal cluster, axillary to the upper leaves.

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[*] (The terminal *wort*, so frequently recurring in English compounds, is derived from the Saxon, being a general name for a *herb* in that language. E.)

[†] (The abundance of blossoms which this plant yields during the autumn affords a feast for bees when other flowers fail. Golden-rod, which will flourish in poor soil, should be cultivated near to every apiary. T. T. 1817.—Though *Curculio Asteris,* as its name bespeaks, is usually connected with the Chinese *Aster*, its larvæ will be found feeding on our present plant, to which it appears to be partial. Vid. Curt. Brit. Entom. vol. i. pl. 45.—It was formerly esteemed as a vulnerary, tonic, and diuretic, especially serviceable in calculous complaints. Vid. Med. and Phys. Journ. vol. 19. and a case in Gent. Mag. 1788. Notwithstanding, however, even Gerard's authority and warm encomium, it has latterly fallen into comparative neglect. "In my practice," says that author, "it shall be placed in the foremost ranke:" and, alluding to the high price the herb bore as a foreign production, till discovered growing near London, the same honest writer very justly remarks, (what may well be applied to various other occasions), "which plainly setteth foorth our inconstancie and sudden mutabilitie, esteeming no longer of any thing (how pretious soever it be) than whilest it is strange and rare. This verifieth our English proverbe, 'Far fetcht and deere bought, is best for ladies:' or rather for fantasticall physitions. Thus much I have spoken, to bring these new fangled fellowes backe againe to esteeme better of this admirable plant"—Dr. Molyneux has the following remark, "*Pulvis foliorum, aut florum, vel integræ herbæ exsiccatæ, et in nares attractus, sternutationes fortissimè excitat.*" But what will the modern beau think of the commentary of another physician, who says, "I look upon common snuffing to be the meanest way of debauchery; hurting the eyes and ears, and shocking the senses, stuffing the stomach and lungs,—and most practised by the most unpolite of men." Stirp. Hibern. E.)

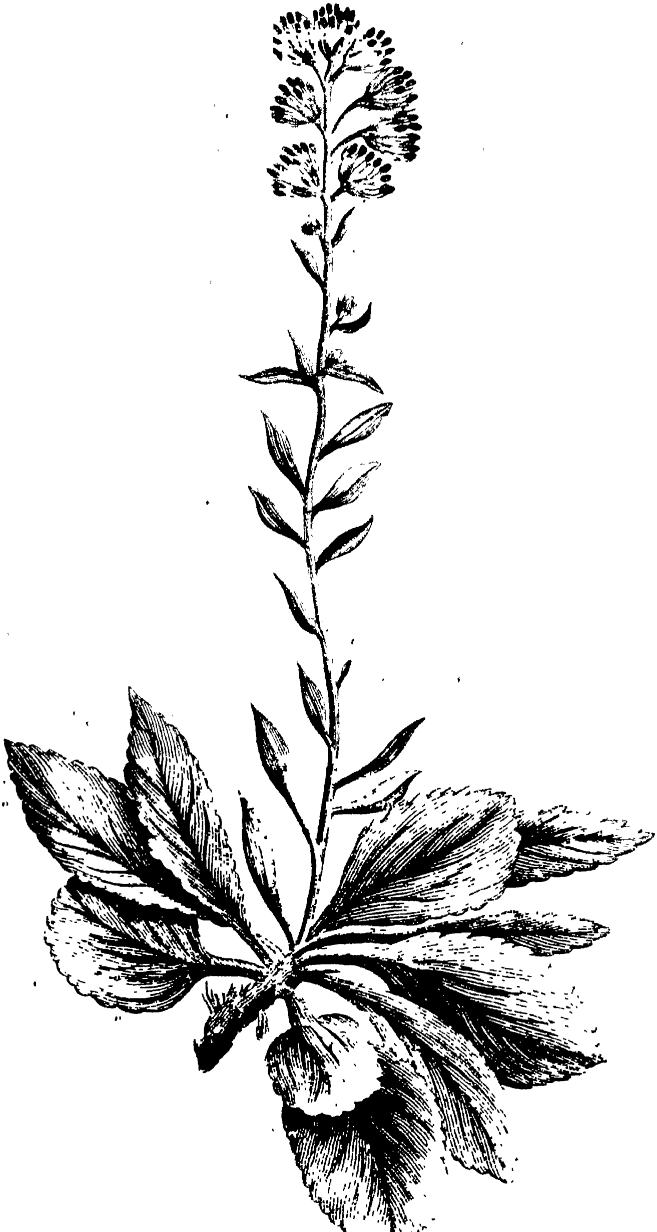

PLATE XXXIII.

About six inches high. *Spike* containing about ten flowers. *Solidago*, 306, Fl. Lapp. I am indebted to Dr. Afzelius for the information that this Lapland plant had been found in Scotland, and I have now a specimen before me from the mountains of Westmoreland.

(On comparing the several kinds of *Solidago*, *S. Lapponica* seems still to maintain an independent character, and is remarkable for its unbranched *stem*, nearly straight, and *root-leaves* decidedly ovate or even orbicular, toothed, or bluntly crenate, and extending down the leaf-stalk, as we have endeavoured to represent in the annexed plate. E.)

CINERA'RIA.* *Recept.* naked: *Down* hair-like: *Calyx* single, many-leaved, equal: (*Seed* quadrangular. E.)

C. PALUS'TRIS. Flowers in a corymb: leaves broad-spear-shaped, tooth-indented: stem woolly.

E. Bot. 151—*Fl. Dan.* 573—*Gmel.* ii. 72—*Dod.* 52. 2—*Lob. Ic.* i. 347—*Ger. Em.* 483. 5—*H. Ox.* vii. 19. 21—*Pet.* 16. 6—*Park.* 126. 3.

Stem one to three feet high, thick, hollow, angular, clammy, tomentose. *Leaves* varying extremely in form and manner of growth, clothed with the same woolliness as the stem, without order, sessile, or half embracing the stem, waved, sometimes barely toothed, those immediately beneath the corymb entire. *Fruit-stalks* branching, (tomentose. E.) *Floral-leaves* awl-shaped, one on each fruit-stalk. *Calyx*, scales nearly equal, spear-shaped, woolly, membranous at the edge. *Blossom* pale yellow. *Florets* of the circumference oval, veined, with two or three teeth at the end, or entire; four lines long, with a short narrow tube. *Florets* of the centre somewhat shorter. *Anthers* somewhat longer than the blossom. *Style* in the *perfect* longer than the stamens; in the *fertile* as long as the tube. *Seeds* small, (furrowed. E.) *Down* white, as long as the tube of the blossom; rays few. Woodw.

MARSH FLEA-WORT. Marshes in Lincolnshire. Fen-ditches about Marsh and Chatteris in the Isle of Ely; Caister near Yarmouth; about Pillin-moss, Lancashire; and Aberavon, Merionethshire. Ray. About Yarmouth, Norfolk. Mr. Woodward. (In Burton Moss, Westmoreland. Mr. Robson. Abundant by the turnpike-gate at Haddisco, Suffolk. Mr. Wigg. E.) P. June—July.

Var. 2. Leaves not jagged. R. Syn. 174. n. 3. Woodward.

Lob. Ic. i. 347. 1—*Ger. Em.* 484. 8—*Park.* 126. 4—*H. Ox.* vii. 19, *row* 2. 23—*Pet.* 16. 5.

Var. 3. Less woolly than var. 1. Stem slender, about eighteen inches high. Leaves strap-spear-shaped, toothed, the lower about four inches long, the upper two and a half to one and a half, and not more than one-fourth wide, not so numerous as in var. 1. Flowers smaller. Fructification similar.

Near Ramsay, Huntingdonshire. Mr. Woodward.

C. INTEGRIFO'LIA. Flowers in a terminal umbel, with an involucrum at its base: root-leaves inversely egg-shaped, upper ones lanceolate; all woolly, obscurely toothed.

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* (From *cineres*, ashes; descriptive of the grey colour of its downy or woolly leaves and stem. E.)

(*Hook. Fl. Lond.* 75. E.)—*Jacq. Austr.* 180—*Fl. Dan.* 1177—*Allion.* 38. 2—*E. Bot.* 152—*Relh. at p.* 220—*Jacq. Misc.* i. 17. 4—*Pet.* 17. 4.

Root fibrous. *Root-leaves* on leaf-stalks, spatula-shaped, obscurely toothed, cottony underneath; *stem-leaves* sessile, spear-shaped, cottony. *Stem* three to six inches high, simple, cottony, angular. *Flowers* one to four, yellow. *Florets* of the circumference ten to fifteen; of the centre numerous, prominent. *Calyx* furrowed, the edges membranous. *Seeds* hairy. *Down* simple. Relh. The size of this plant varies much, as also the number of its flowers. I have before me a specimen two inches and a half high, with only two flowers, and another sent by Mr. Relhan, nine inches high, with an umbel of eight flowers. The fruit-stalk of the central flower but half the length of the others. (Remarkable for the white downy substance with which the *leaves* and *stems*, and in some measure the *calyx*, is covered. Hook. E.)

MOUNTAIN FLEA-WORT. *C. campestris.* Retz. (Willd. De Cand. Pers. Hoffm. Ait. Hook. *C. integrifolia.* With. Sibth. Relh. Sm. *C. integrifolia β, palustris.* Jacq. *C. alpina.* Huds. Relh. *C. alpina γ, integrifolia.* Linn. E.) Hilly pastures. Gogmagog Hills, Newmarket Heath, and the Devil's Ditch. (Downs of Sussex. Mungewell, on Grimes Dike; and Burford Downs, Oxfordshire. Sibthorp. Near Basingstoke, and Andover. Hudson. Belhan, Isle of Wight; and Flower Down, near Winton. Pulteney. E.) P. May—June.

(Var. 2. *Maritima.* From one to two feet high, or more: all the leaves, especially those of the stem, larger and smoother than those of the above, radical leaves sometimes widely toothed.

Marine Flea-wort. Welsh: *Chweinllys arfor.* On declivities above the sea, at Porth y pistill, and Porth y felin, near Holyhead. Rev. Hugh Davies. E.)

I'NULA.* *Receptacle* naked: *Down* hair-like: *Anthers* with two bristles at the base of each.

1. HELE'NIUM. Leaves embracing the stem, egg-shaped, wrinkled, cottony beneath: scales of the calyx egg-shaped, (leafy. E.)

Woodv. 108—*Kniph.* 7—*Blackw.* 472—(*E. Bot.* 1546. E.)—*Ludw.* 59—*Dod.* 344—*Lob. Obs.* 309. 1, *Ic.* i. 574. 2—*Ger. Em.* 793—*H. Ox.* vii. 24, *row* 3, *fig. the last*—*Pet.* 16. 1—*Park.* 654—*Gars.*—*Ger.* 649—*Fl. Dan.* 728—*Matth.* 71—*Fuchs.* 242—*J. B.* ii. *a.* 108—*Trag.* 170.

Stem five or six feet high, branched towards the top, scored, cottony. *Leaves*, the lower on leaf-stalks, spear-shaped; the upper egg-spear-shaped, serrated or toothed, deep green, slightly hairy above, whitish green and thickly cottony underneath. *Flowers* very large, solitary, terminating the stem and branches. *Calyx*, the outer egg-spear-shaped, like the leaves; the inner bluntly egg-shaped, cottony. *Blossom* yellow. *Florets* of the circumference one to one inch and a half long, with three pointed teeth at the end. *Down* shorter than the florets. Woodw.

ELECAMPANE. (Irish: *Meacan Eclin.* Welsh: *Marchalan; Llwyglys.* E.) Moist meadows and pastures. In Essex, frequent; about St. Ive's, Cornwall; Bugden, Huntingdonshire; between Denbigh and St. Asaph. Hudson: (and near the ruin and weir at Wigfair, the seat of John Lloyd,

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* (For want of a more rational interpretation, supposed to be a corruption of ελενιον, as fabled to have sprung from the tears of HELEN. E.)

Esq., Denbighshire; also at the bottom of the wall of a field bordering Garn dingle, in the same county. E.) Side of Bredon Hill, ascending from Great Comberton, Worcestershire. Nash. Ripton and Warboys, Huntingdonshire, the latter far removed from any house; Mettingham, Suffolk; not uncommon in Norfolk. Mr. Woodward. In a pasture ground near Wick Cliffs, Gloucestershire. Rev. G. Swayne. Several places near Dalton, clearly in a wild state. Mr. Atkinson. (Very plentiful in the fields and lanes about Aber, Carnarvonshire. Waring. Byland Wood near Coxwould, Yorkshire. Rev. Archdeacon Pierson; and pastures about Fountains Abbey. Mr. Brunton. Castle Eden Dean, Durham. Mr. Winch. In Studley Castle field, and Grafton, Warwickshire; Himley wood, Staffordshire. Bree; Purton. Between King's Bridge and Llangoed Mill, Anglesey. Welsh Bot. Ruins of Mugdoch Castle, near Glasgow. Hopkirk. E.) P. July—Aug.*

I. DYSENTER'ICA. Leaves embracing the stem, heart-oblong, downy: stem woolly, forming a kind of panicle: scales of the calyx bristle-shaped.

Curt. 164—(*E. Bot.* 1115. E.)—*Kniph.* 12—*Fl. Dan.* 410—*Walc.*—*Matth.* 872—*Clus.* ii. 21. 1—*Dod.* 52. 1—*Lob. Obs.* 187. 1, *and Ic.* i. 345. 2—*Ger. Em.* 482. 3—*Pet.* 16. 2—*H. Ox.* vii. 19. 7—*Fuchs.* 436—*J. B.* ii. 1050. 1.

Stem upright, twelve to eighteen inches high, E.) cylindrical, scored, cottony, branched towards the top. *Leaves* spear-shaped, obscurely toothed, arrow-shaped at the base, cottony on both sides. *Flowers* terminating the stem and branches, solitary. *Calyx* scales numerous, cottony. *Blossom* yellow. *Florets* of the circumference with three teeth at the end. *Down* as long as the tube of the blossom. Woodw.

(A variety with very short rays has been described by Relhan, in Fl. Cantab. E.)

COMMON ELECAMPANE. (Welsh: *Cedowys cyffredin.* E.) Moist meadows and pastures, watery places, sides of brooks and rivulets. A. Aug.—Oct.†

(I. PULICA'RIA. E.) Upper-leaves embracing the stem, wavy, strap-spear-shaped, blunt: stem (very much branched, hairy: flowers hemispherical, those of the circumference very short. E.)

Dicks. H. S.—*Curt.* 156—(*E. Bot.* 1196. E.)—*Sheldr.*—*Fl. Dan.* 613—*Blackw.* 103—*Ger.* 390. 2—*Trag.* 166—*Lonic.* i. 131. 3—*Dod.* 52. 3—*Lob. Obs.* 187. 2, *and Ic.* i. 345. 1—*Ger. Em.* 482. 4—*H. Ox.* vii. 20. 30—*Pet.* 16. 3.

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* The root is esteemed a good pectoral. Dr. Hill affirms, from his own experience, that an infusion of the fresh root, sweetened with honey, is an excellent medicine in the hooping cough. A decoction of the root cures sheep affected with the scab. Horses and goats eat it; cows, sheep and swine refuse it. (Mr. Rose has obtained a white substance from the concentrated juice of this plant much resembling starch, though neither exactly that nor gum, but a farinaceous powder holding a middle rank between the two.—It is cultivated for the sake of the root, which in Germany is used candied as a stomachic, and is gently stimulating, as *Angelica*; a decoction outwardly applied is said to cure *Psora*. E.)

† It has a peculiar scent, compared by some to that of soap. The Russian soldiers, in the Persian expedition under General Keith, were much relieved from dysentery, by the use of this plant. Cows are not fond of it; goats and sheep refuse it. Linn. A horse eat it, but it is generally left untouched. St. (*Cassida maculata* is found on its leaves. E.)

Stem (about a span high, E.) cylindrical, scored, smooth, crooked, often tinged with purple, much branched. *Leaves*, the lower sessile; upper embracing the stem, spear-shaped, waved at the edge, slightly hairy and cottony. *Flowers* numerous, solitary. *Calyx scales* numerous, awl-shaped, woolly, the lower spreading. *Blossom* yellow. *Florets* of the circumference with three teeth at the end; often wanting. *Down* shorter than the florets; rays few. Woodw. (The general appearance and form of the *flowers* is the same in each species, and the *stems*, though frequently upright, are sometimes found trailing. Fl. Brit. E.)

SMALL ELECAMPANE. *I. pulicaria.* Linn. *I. uliginosa.* Sibth. *I. cylindrica.* With. Hull. Sym. Road-sides, and where water has stagnated during the winter. A. Aug.—Oct.

I. CRITHMOI'DES. Leaves strap-shaped, fleshy, generally three-pointed: (calyx smooth. E.)

E. Bot. 68—*J. B.* ii. *a.* 106. 3—*Dod.* 706. 1—*Lob. Obs.* 215. 1, *and Ic.* i. 395. 2—*Ger. Em.* 533. 3—*Park.* 1287—*H. Ox.* vii. 21. 16—*Pet.* 17. 9—*Matth.* 491—*Ger.* 427. 3.

Stem (one foot high, upright, sometimes decumbent. E.) firm, smooth, scored, branched. *Leaves* at the ends of the branches crowded. *Flowers* solitary, (yellow, large and showy, E.) terminating the upper branches. *Fruit-stalks* thick. *Calyx*, scales numerous, awl-shaped, fleshy, yellowish green. *Seeds* woolly. *Down* (reddish, E.) shorter than the florets; rays few, when viewed with a glass finely toothed on one side. Woodw. *Lower-leaves* with teeth at the end, and sometimes a little toothed at the sides; upper ones entire.

(SAMPHIRE-LEAVED ELECAMPANE. GOLDEN SAMPIRE. Welsh: *Cedowys sugawl*; *Sampier y geifr.* E.) Salt-marshes on the sea-coast, in muddy soil. P. Aug.[*]

DORO'NICUM.[†] *Receptacle* naked: *Down* hair-like: *Calyx* scales in two rows, equal, longer than the blossoms: *Seeds* of the circumference without down.

D. PARDALIAN'CHES.[‡] Leaves heart-shaped, blunt, finely toothed: root-leaves stalked; others embracing the stem; (both strongly veined beneath. E.)

(*Hook. Fl. Lond.* 88. E.)—*Jacq. Austr.* 350—(*E. Bot.* 630. E.)—*Ludw.* 57—*Kniph.* 2—*Blackw.* 239—*Clus.* ii. 19—*Ger. Em.* 762—*Park.* 321. 7—*H. Ox.* vii. 24. 4—*Mill.* 128—*Gars.* 15.

(*Stem* erect, two or three feet high, rough with hairs, slightly viscid towards the top. *Flowers* terminal, solitary, large, yellow. *Scales* of the calyx strap-shaped, sharp-pointed, hairy. Fl. Brit. *Root* tuberous at intervals, the tubers transversely striated, ovate, with fibres from each side; (Hook.) hence in general form resembling a scorpion, and thus Bauhin, "*D. radice Scorpii.*" Lamarck. E.)

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[*] (The young branches of this plant are frequently sold in the London market for samphire, but they have none of the warm aromatic taste of the true samphire; (*Crithmum maritimum.* E.)

[†] (So called from *Doronigi*, the Arabian name of the plant: and hence, as Mr. Phillips observes, its celebrity among those Nomadian tribes, (from whom the medical virtues of numerous plants have been made known in Europe,) may be inferred; or, as some imagine, from δορον, a gift; and νικη, victory; from its power of destroying. E.)

[‡] (From παρδος, a leopard, and αγχειν, to strangle, or destroy: having been formerly used, mixed with flesh, to poison wild beasts: and expressive of the same practice, is the terminal to the English name of this and some other species, (as Wolf's-*bane*, Cow-*bane*, Flea *bane*, &c.) derived from the Saxon. E.)

GREAT LEOPARD'S-BANE. About Hoddam Castle, Annandale, and several other places in the Lowlands. Lightfoot. Near the World's End, Harrowgate. Mr. Manby. Banks of the Severn, below Bridgnorth. (By the road-side, near Saling Hall, Essex. Mr. Walford, in Fl. Brit. Mountains of Northumberland. Gerard. Hedge in a lane leading from Widdington, to a wood called the Jock, Essex. Mr. T. F. Forster, in Bot. Guide. Woods at Catton, by Norwich. Mr. Lindley, in Fl. Lond. E.)
P. May—June.*

BEL'LIS.† *Recept.* naked, conical: *Down* none: *Calyx* hemispherical, with equal scales: *Seed* inversely egg-shaped.

B. PEREN'NIS. (Fruit-stalk naked, radical: leaves obovate, crenate: root creeping. E.)

Curt.—(*E. Bot.* 424. E.)—*Kniph.* 1—*Fl. Dan.* 503—*Walc.*—*Blackw.* 200—*Ludw.* 184—*Matth.* 912—*Dod.* 265. 1—*Lob. Obs.* 252. 2, *and Ic.* i. 476. 1—*Ger. Em.* 636. 5—*Pet.* 19. 2—*Ger.* 510. 4—*H. Ox.* vi. 8. 26—*Ger.* 510. 3—*Ger. Em.* 636. 4—*Park.* 530. 11—*H. Ox.* vi. 8. 29—*Fuchs.* 147—*Trag.* 161.

Stalk hairy, solid at the bottom, hollow upwards, sometimes with a few leaves. Relh. *Leaves* blunt, spread upon the ground. *Florets* in the centre yellow, those in the circumference notched at the end, white above, more or less empurpled beneath. (*Receptacle* hollow, conical. Few plants vary in size more than the Daisy according to the nature of the soil in which it grows: in poor land dwindling to little more than an inch in height, with a wiry stem; in rich mould rising to four or five inches in height, with all its parts proportionably expanded. These different appearances have induced some Botanists to describe varieties, or even new species, but which, on change of situation, have failed to maintain a permanent character. E.)

COMMON DAISY.‡ (Scotch: GOWAN. Irish: *Noinin.* Welsh: *Llygad y dydd cyffredin.* Gaelic: *Noinein.* E.) Meadows and pastures.
P. March—Oct.§

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* (This plant can scarcely be deemed an aboriginal. The older authorities did not consider it indigenous, and though now occasionally found in an apparently wild state, it has merely in the course of time become naturalized. It had formerly a place in our gardens, the root being esteemed a valuable alexipharmic, but whatever may have been its virtues, its deleterious effects, when given incautiously, are unquestionable. Matthiolus records the instance of a dog being killed by it; and there is some reason to believe that the mortal career of the celebrated Conrad Gesner, the German Pliny, or as Boerhaave styles him, that "*Monstrum Eruditionis,*" was prematurely closed by experimenting with this fatal herb. E.)

† (From *bellus*, pretty. E.)

‡ (Q. d. the *eye of day*, opening with the sun. *Bairnwort* in Yorkshire, probably from the delight which children take in gathering these flowers. E.)

§ The leaves are slightly acrid. The roots have a penetrating pungency. Horses, sheep, and cows refuse it. Linn. (Ludovici recommends it as an antiscorbutic. But, without insisting on its problematical virtues, this interesting little plant proves infinitely more attractive as *La Belle Marguerite* of the French, (perhaps so designated from its *pearly* aspect); the "Bonnie gem," of the Ayrshire ploughman; the

"Wee, modest, crimson-tipped flower,"

Var. 2. *Flower herbaceous, globular.*

In Mr. Shelden's copse near his house in Worcestershire. Ray.

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to which the bard so feelingly compares his own napless fate; and that description of *gowan*, (for the Scotch seem to apply the term to several different flowers,) which, though ever and anon about our path,

"Lurks lowly unseen."

Intimately interwoven with our earliest impressions, in that

"Sweet age of dear delusions,")

the Daisy becomes familiarly endeared; and ever continues far more alluring than the gaudy show of many splendid beauties.

"By dimpled brook and fountain brim
The wood-nymphs, deck'd with *Daisies* trim,
Their merry wakes and pastimes keep." Milton.

"The Daisy," observes Mr. Phillips, "has been made the emblem of Innocence, because it contributes more than any other flower to infantine amusement and the joys of childhood."

—— "In the spring and play-time of the year,
That calls the unwonted villager abroad
With all her little ones, a sportive train,
To gather king-cups in the yellow mead,
And prink their hair with *Daisies*." Cowper.

And thus Chaucer, in the fourteenth century:

—— "Of all the floures in the mede,
Than love I most these floures of white and rede:
Such that men callen *Daisies* in our town:
To them I have so great affectioun,

* * * *

That I ram up, and walking in the mede
To seen this floure ayenst the sunne sprede,
Whan it upriseth early by the morrow,
That blissful sight softeneth my sorow.

* * * *

And whan that it is eve I renne blithe,
As soone as ever the sunne ginneth west,
To seen this floure, how it woll go to rest."

Or in the more modern dialect of Leyden;

"Oft have I watched thy closing buds at eve,
Which for the parting sun-beams seemed to grieve,
And when gay morning gilt the dew-bright plain,
Seen them unclasp their folded leaves again."

Shakspeare, Burns, and a tribe of inferior poets, have wreathed their chaplets with this humble flower, and conferred additional interest on her enamelled meads; but none more successfully than Montgomery, from whose beautiful little poem we regret our inability to give more than one brief extract.

"'Tis Flora's page: in every place,
In every season, fresh and fair,
It opens with perennial grace,
And blossoms every where.

On waste and woodland, rock and plain,
Its humble buds unheeded rise,
The rose has but a summer's reign,
The *Daisy* never dies."

Nor has any inspired votary of the Muse excelled either in elegant simplicity or genuine

CHRYSAN'THEMUM.* *Recept.* naked, rather convex: *Down* none: *Cal.* hemispherical, tiled; scales with a dilated membranous border.

(1) *Florets of the circumference white.*

C. LEUCAN'THEMUM. Leaves embracing the stem, oblong, serrated upwards, pinnatifid at the base; (radical ones obovate, stalked. E.)

(*E. Bot.* 601. E.)—*Ludw.* 183—*Kniph.* 6—*Curt.* 348—*Fl. Dan.* 994—*Sheldr* 6—*Matth.* 910—*Dod.* 265. 3—*Lob. Obs.* 253. 2, *and Ic.* i. 478. 1—*Ger. Em.* 634—*Park.* 528. 1—*Walc.*—*Ger.* 509—*Fuchs.* 148—*J. B.* iii. *a.* 114. 2—*Trag.* 144. 1—*Lonic.* i. 89. 1—*Pet.* 19. 1—*Blackw.* 42—*H. Ox.* vi. 8. 1, *f.* 2.

Flowers large. *Florets* of the centre yellow; of the circumference white, spear-shaped, with mostly three teeth. Relh. *Stem* (one and a half to two feet high, E.) upright, scored, simple, or with few branches. *Leaves*

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feeling the prose apostrophe of Miss Kent. "Who can see or hear the name of the Daisy, the common Field Daisy, without a thousand pleasurable associations! It is connected with the sports of childhood and with the pleasures of youth. We walk abroad to seek it; yet it is the very emblem of home. It is a favourite with man, woman, and child, it is the *robin* of flowers. Turn it all ways, and on every side you will find new beauty. You are attracted by the snowy white leaves" (petals) "contrasted by the golden tuft" (of tubular florets) "in the centre, as it rears its head above the green grass · pluck it, and you find it backed by a delicate star of green" (calyx), "and tipped with a blush colour, or a bright crimson.

"*Daisies* with their pinky lashes"

are among the first darlings of Spring." Vid. "Flora Domestica." Phillips further states, "the Daisy not only closes its petals at night, but they are also carefully folded over the yellow disk in rainy weather;" (indeed so universally and so completely are they closed that acres which appear as covered with a white sheet during their expansion, are by the effect of a shower almost momentarily restored to their pristine verdure; E.) and justly remarks that "the power of thus securing the parts of fructification is almost peculiar to plants native of humid and fickle climates. (The use of the petals, which form a ray round these little yellow florets, is to secure them from the effects of inclement weather, until the pollen of the anthers is discharged on the stigmas so as to prepare seed for future plants, and when this part of the economy of nature is performed, the ray of the Daisy remains expanded, and does not

"Shut when Titan goes to bed,"

but continues open until the petals decay."

"*Daisies*, ye flowers of lowly birth,
Embroiderers of the carpet earth,
  That stud the velvet sod,
Open to spring's refreshing air,
In sweetest smiling bloom declare
  Your Maker and my God." Clare.

Transplanting to richer soil, and cultivation, (by transforming the yellow florets into petals so as entirely to exclude the disk), produces the Double Daisy, varying in colour from white to crimson. Hence also arises the very curious Proliferous, or Hen and Chickens Daisy, which exhibits a number of smaller flowers surrounding, but completely detached by their own stalks, from the principal central one. They are sometimes used as an edging to borders, but are subject to partial decay from drought and too much exposure to a hot sun. The common Daisy is a troublesome interloper on the mowed lawn; on smaller grass plots it might perhaps be advantageously salined. Vid. *Carduus.* E.)

* (From χρυσος, gold, and ανθος, a flower; descriptive of its large yellow blossoms. E.)

the upper sometimes embracing the stem, oblong-wedge-shaped or spear-shaped, serrated, sometimes toothed, and even wing-cleft at the base. *Flower* one, terminal. *Calyx,* scales spear-shaped, unequal. *Florets* of the circumference sometimes entire. Woodw. *Calyx,* outer scales green, edged with brown, the inner with a membranous border.

GREAT WHITE OX-EYE. MOON DAISY. (MAUDLIN-WORT. Irish: *Aisheoc bàn.* Welsh: *Aspygan; Llygad y dydd mawr.* Gaelic: *Am breinein-brothach.* E.) Dry meadows, pastures, and walls.
P. June—July.*

(2) *Flowers entirely yellow.*

C. SE'GETUM. Leaves embracing the stem, jagged upwards, tooth-serrated towards the base, (glaucous. E.)

Dicks. H. S.—(*E. Bot.* 540. E.)—*Fl. Dan.* 995—*Clus.* i. 334. 2—*Dod.* 263. 1—*Lob. Obs.* 298. 2, *and Ic.* i. 552. 1—*Ger. Em.* 743. 1—*Park.* 1370. 1—*H. Ox.* vi. 4, *row* 2. 1—*Pet.* 19. 6—*Trag.* 144. 2—*Lonic.* i. 89. 1.

Stem upright, scored, smooth, branched, (one to two feet high. E.) *Leaves* sea-green, varying in figure, wedge-strap or spear-shaped, distantly serrated towards the base, usually deeply toothed or jagged, with frequently three clefts at the end, (terminated by a little projecting point. *Flowers* very large, yellow, E.) terminal. *Calyx,* scales oval, blunt, sea-green, with membranous edges. *Florets* of the circumference oval, about half an inch long. *Seeds* slightly serrated, whitish. Woodw. Whole *plant* smooth. *Summits* in the fertile flowers frequently three.

CORN MARIGOLD. GOLDINS. YELLOW OX-EYE. Buddle in Norfolk. Mr. Woodward. (In Scotland, YELLOW GOWANS, QUILLS, GOOLS. In Kent, YELLOW BOTTLE. North of England, GOWLANS, GULES. Welsh: *Gold yr yd.* Gaelic: *An ditheau.* E.) Corn fields.
A. June—Oct.†

(PYRE'THRUM.‡ *Recept.* naked: *Seed* crowned with a border: *Cal.* hemispherical, tiled; scales somewhat acute, membranous at the edges. E.)

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* The young leaves may be eaten in salads. Horses, sheep, and goats eat it. Cows and swine refuse it. (*Livia Leucanthemi* frequents this species. Geoffroy reports that this plant, gathered before it blossoms, and boiled in water, imparts an acrid taste, penetrating and subtile like pepper; and that this decoction is an excellent vulnerary and diuretic. By agriculturists it is considered a troublesome weed, only to be extirpated from dry pastures by converting the land into tillage for several years. Sinclair. E.)

† An extremely troublesome weed in the Norfolk turnip-fields in a sandy soil. It was imported into Sweden along with corn from Jutland, about the end of the sixteenth century. In Denmark there is a law to oblige farmers to root it up from their corn-fields; (and Threlkeld states, (1727,) that in Britain, "Mannour-courts do amerce careless tenants, who do not weed it out before it comes to seed;" a laudable practice, worthy of being maintained, (as the laws of the Medes and Persians,) *in perpetuo*, and equally applicable to other palpable negligences, according to the *quod damnum*. E.) It may be destroyed by manuring the ground in autumn, followed by a summer fallow, and harrowing the land about five days after sowing the grain. Its yellow flowers, however, which follow the sun in a very remarkable manner, give a brilliancy to the fields in tillage, and please the eye of the passing traveller. Linn. A large quantity, which grew on some arable land, was cut when in flower, dried, and eaten by horses as a substitute for hay. Hollefear. It is used by the Germans for dying yellow. (It is most effectually eradicated by hand. E.)

‡ (An ancient Greek name, originally designating an herb still more pungently hot or fiery, according to a literal interpretation, than the present species. E.)

P. PARTHE'NIUM. Leaves stalked, compound, flat: leafits egg-shaped, cut: fruit-stalks branched: (flower-stalks corymbose: stem erect. E.)

(*E. Bot.* 1231. E.)—*Ludw.* 192—*Kniph.* 5—*Gars.* 368—*Blackw.* 192—*Woodv.* 249—*Fuchs.* 45—*J. B.* iii. *a.* 129—*Dod.* 35. 2—*Lob. Obs.* 433. 1, *and Ic.* i. 751. 1—*Ger. Em.* 652. 1—*Park* 83. 1—*Pet.* 19. 5—*Matth.* 907—*H. Ox.* vi. 10. 1—*Ger.* 526—*Fl. Dan.* 674—*Lonic.* i. 151. 2—*Trag.* 156.

Stem three feet high, firm, scored, somewhat hairy. *Leaves* alternate, slightly hairy; *leafits,* two or three pair, oval, jagged, a large one terminal, wedge-shaped with lobes, the middle one of which is three-cleft, side ones scolloped. *Flowers* solitary. *Fruit-stalks* thickest just beneath the flower, hairy, mostly branched. *Calyx,* scales oval. *Florets* of the circumference wedge-shaped, white; those of the centre yellow. *Seeds* egg-shaped, lopped at the base, deeply furrowed, whitish. Woodw. *Flowers* sometimes double.

COMMON FEVERFEW, (q. d. *Febrifuge.* Welsh: *Tyrfgryd; Wermod wen.* *P. Parthenium.* Relh. Sm. Willd. Hook. Grev. *Matricaria Parthenium.* Linn. Huds. Lightf. With. Woodv. E.) Waste places, hedges, and walls. P. June—July.*

P. INO'DORUM. Leaves sessile, winged, many-cleft: stem branched, spreading: (crown of the seed entire. E.)

(*Hook. Fl. Lond.* 101—*E. Bot.* 676. E.)—*Fl. Dan.* 696—*Pet.* 19. 12—*Fuchs.* 144—*J. B.* iii. *a.* 120. 2.

This obscure plant is readily distinguishable from *Anthemis Cotula,* which it very much resembles, as also *A. arvensis,* by the want of chaff on the receptacle; and from *Matricaria Chamomilla* by its flattish calyx; its scales brown and uneven at the edge; its receptacle hemispherical, not conical; the rays of the blossom expanding, not bent down, and its flowers being thrice as large. Linn. *Stem* much branched, smooth, scored, sometimes purplish. *Leaves,* wings distant, twice or thrice divided, the extreme segments thread-shaped, mid-rib broad, membranous, and somewhat embracing the stem at the base, narrowing upwards. *Flowers* large, terminal, (upon long, naked, peduncles. E.) *Florets* of the circumference nearly strap-shaped, eight to nine lines long; of the centre, greenish at the base, yellow above; segments spear-shaped, expanding. *Receptacle* conical. *Seeds* brown, lopped at each end, with four whitish prominent angles. Woodw. (*Calyx-scales* smooth, and, compared with those of a *Chrysanthemum,* rather acute, as wanting the dilatation, or appendage characteristic of that genus, and having a narrow membranous border along the whole margin. The membranous crown of the seed, however, stamps the genus. Sm. E.) *Florets of the circumference* twenty or more; those in the centre very numerous. (The genera of *Chrysanthemum*, *Pyrethrum*, and *Matricaria*, border very closely upon each other. To the present plant the words "*squamæ acutiusculæ*" of the calyx do not apply, for they are decidedly obtuse. This plant, though called *inodorum*, in opposition to the strong and disagreeable smell of its congeners, is nevertheless not altogether scentless. Hook. E.)

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* The whole herb has a strong smell and a bitter taste, and yields an essential oil by distillation. A horse refused it. St. (Simon Pauli relates wonders of its efficacy in hysteria; and Geoffroy adds, " all that bitters and carminatives can do may be expected from this." Modern practitioners, in England at least, have considered its virtues scarcely equal to those of Chamomile: but, perhaps, these contradictory accounts may, in some degree, be reconciled by the consideration of climate affecting the plant, if not the patient and the disorder. Several varieties, as the double, fistular, curled-leaved, &c. are found in gardens. E.)

CHAMOMILE GOLDINS. (SCENTLESS MAYWEED. Welsh: *Ffenigl y cwn*. *P. inodorum*. Relh. Sm. Willd. Hook. Grev. *Chrysanthemum inodorum*. Linn. Lightf. With. Hull. Sibth. Abbot. *Matricaria inodora*. Linn. Huds. Corn-fields and road sides. A. July—Sept.

Var. 2. *Maritimum*. Outer scales of the calyx with finger-like divisions; inner ones fringed at the edge.

Only about four inches high, but in other respects agreeing with the preceding.

On the beach at Weymouth.

P. MARIT'IMUM. Receptacles hemispherical: leaves doubly winged, sessile, somewhat fleshy, convex above, keeled underneath: (crown of the seeds lobed: stems spreading. E.)

(*E. Bot.* 979. E.)—*Ray* 7. 1, *at p.* 188.

Root woody, running deep, perennial. *Stems* (six to twelve inches high, E.) reclining, darkish purple, smooth, firmer and stronger than those of *Anthemis nobilis*, and forming a fuller turf, but not creeping or spreading so wide. *Leaves* thicker and shorter, shining, dark green. *Flowers* (much smaller than those of *P. inodorum*, and the ray shorter in proportion, Hook. E.) several on a stem. Dill. in R. Syn. 186. *Florets* in the centre yellow; those of the circumference white. (*Calyx* smooth, with scales very thin and blackish at the edge. *Seeds* furnished with a three or four-cleft membranous border. *Plant* slightly aromatic. E.)

SEA FEVERFEW. (*P. maritimum*. Willd. Sm. Hook. Grev. *Matricaria maritima*. Linn. Lightf. With. E.) *Matricaria inodora* γ. Huds. Sea coast in sandy soil. On the coast of Sussex, and very plentifully at Cockbush, seven miles from Chichester. Dillenius. Isle of Bute, the Western side of Cantire, between Machrianish and Barr. Lightfoot. Rocks at Doun, near Bamff, in Scotland. Sir J. E. Smith. Isle of Walney. Mr. Atkinson. (Manorbia bay, near Pembroke. E. Bot. At Weymouth. Rev. Archdeacon Gooch. Fl. Brit. Sea shores, Aberdeen. Mr. Anderson. About Teignmouth. Rev. J. Pike Jones. E.) P. July.

MATRICA'RIA.* *Recept.* naked, nearly cylindrical: *Down* none: *Cal.* nearly flat, tiled; scales membranous at the edges.

M. CHAMOMIL'LA. (Leaves smooth, pinnate: leaflets strap-shaped, simple or divided: rays expanding: calyx scales dilated, rather blunt. E.)

Kniph. 9—*Ludw.* 131—*Curt.* 331—*Blackw.* 67. 1—(*E. Bot.* 1232. E.)—*Sheldr.* 33—*Dod.* 257. 2—*Lob. Obs.* 445. 1, *and Ic.* i. 770. 1—*Ger. Em.* 754. 1—*Park.* 85. 1—*Blackw.* 298—*Fuchs.* 25—*J. B.* iii. *a.* 116—*Trag.* 148—*Matth.* 905—*Lonic.* i. 90. 2—*H. Ox.* vi. 12. 7—*Pet.* 19. 9.

(From its supposed efficacy in disorders of the *matrix*. E.)

Stem scored, branched, (about a foot high. E.) *Leaves* doubly winged, the upper often simply winged; wings distant; little wings with two or three clefts; leafits strap-shaped, of an equal breadth with the mid-rib. *Flowers* solitary, terminal. *Calyx,* scales bluntly spear-shaped, hairy, membranous at the edge, with a green line along the back. *Florets* of the circumference white, nearly strap-shaped, at first expanding, afterwards bent back; those of the centre yellow. *Receptacle* almost cylindrical, dotted. Woodw. (In scent resembling the Officinal Chamomile. E.)

WILD CHAMOMILE. (Irish: *Meadh Druah.* Welsh: *Amranwen cyffredin.* E.) In corn-fields, on dung-hills, and by the sides of roads.
A. May—Aug.*

(The plant hitherto supposed to be *M. suaveolens* of Linnæus proves not to be so: the real one, according to Smith, having flowers only half the size of those of *M. chamomilla,* and never having been found in these countries. E.)

ANTHEMIS.† *Recept.* chaffy: *Down* none: *Calyx* hemispherical, scales nearly equal: *Florets* of the circumference more than five.

(1) (*Florets of the circumference white.* E.)

A. ARVEN'SIS. Receptacle conical: (scales lanceolate, acute, keeled, projecting: leaves bi-pinnatifid, hairy: seeds crowned with a quadrangular border. E.)

(*E. Bot.* 602—*Fl. Dan.* 1178. E.)—*Kniph.* 11—*Tabern.* 70. 1—*Pet.* 19. 8.

Plant hoary. *Stems* spreading. It has the habit and size of *A. Cotula,* but the stems spread more, the fruit-stalks are longer, less scored, the grooves being only four or five; in *A. Cotula* about eight. The *leaves* are more grey and scentless. The inner scales of the calyx are broad and membranous at the end, not so in *A. Cotula.* *Chaff* spear-shaped, in the other slender as a bristle; apex of the seed crowned with a four-sided border as in *Matricaria Chamomilla;* in *A. Cotula* the seed has no such crown. Linn. *Stem* (twelve to eighteen inches high, E.) branched immediately above the root, scored, slightly hairy, pale green, with sometimes a tinge of red. *Branches* generally naked upwards. *Flowers* terminal. *Fruit-stalks* hairy, and somewhat thicker beneath the calyx. *Calyx,* scales oval, with an awl-shaped green line along the back, somewhat hairy; edges membranous. *Florets* of the circumference white, somewhat elliptical, with two or three teeth, four or five lines long: those of the centre with a greenish tube, swelling upwards, border yellow, bent back. *Chaff* spear-shaped, very much pointed, somewhat keeled, as long as the florets. Woodw. *Leaves* (with parallel segments, E.), terminated by semi-transparent, conical, sharp points. (*Plant* nearly scentless; flowers slightly fragrant. E.)

CORN CHAMOMILE. (WHITE OX-EYE. E.) *Cotula alba. Cotula non fœtida. Oculus bovis. Bupthalmum.* Dod. Pempt. 259. Corn and fallow-fields. Hudson. Gravel-pits in Peckham-fields, and in the barren stubble-fields between Eltham and Shooter's-hill. Ray. Pastures about Affcote and Stewponey, near Stourbridge, Worcestershire. Dr. Stokes. Corn-fields in Norfolk. Mr. Woodward. (At Mary Church, Devon. Rev. J. P. Jones. About Dorking. Mr. Winch. Roslin wood. Mr. Neill. Grev. Edin. E.) B. June—July.

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* Its properties resemble those of *Anthemis nobilis,* the Officinal Chamomile. The Finlanders use an infusion of it in consumptive cases. Cows, goats, and sheep eat it. Horses are not fond of it. Swine refuse it. (The larvæ of *Cassida viridis* are nourished by it. E.)

† (From ανθεω, or ανθεμον, a flower, as having a profusion of blossoms. E.)

Var. 2. *Double-flowered.* All the florets narrow.

Cotula non fœtida, flore pleno. R. Syn. 186. St. James's field on the upper side near the highway, and at Great Strickland, Westmoreland. Ray.

A. COT'ULA. Receptacles conical: scales bristle-shaped: seeds without any border: (leaves bi-pinnatifid, slightly hairy. E.)

Curt. 329—*Fl. Dan.* 1179—*E. Bot.* 1772—(*Bart.* 14. E.)—*Dod.* 258—*Lob. Obs.* 447. 1, *and Ic.* i. 773. 2—*Ger. Em.* 757. 1—*Park.* 87. 9—*H. Ox.* vi. 12. 8—*Fuchs.* 583—*J. B.* iii. *a.* 121. 1—*Blackw.* 67—*Gars.* 216—*Pet.* 19. 11—*H. Ox.* vi. 12. 10.

Fruit-stalks with about eight scores. *Calyx*, scales by no means widening towards the point, and scarcely membranous. *Chaff* very minute, like a fine bristle. *Seeds* not crowned with the four-cornered edge, but terminated by a simple pore. Linn. *Plant* palish green. *Stem* slightly downy, (twelve to eighteen inches high E.) *Leafits* often cloven towards the end. *Petals* hanging down, and continuing in that state till morning. Curt. Outer florets white, tri-dentate; central florets yellow.

Fetid Chamomile or Mayweed. (Mather. Irish: *Finel Moidiur.* Welsh: *Camri y cwm.* E.) Corn-fields, road sides and waste ground. A. May—Aug.*

Var. 2. *Double-flowered.* All the florets narrow.

Cotula fœtida, flore pleno. R. Syn. Fields between Hitchin and the Bald Oak, in the Isle of Thanet, and between Gillingham and Chatham. Ray.

A. NOB'ILIS. Leaves doubly pinnate, strap-shaped, acute, somewhat downy: (scales of the receptacle membranous, obtuse, not exceeding the florets. E.)

(*E. Bot.* 980. E.)—*Woodv.* 103—*Knigh.* 9—*Ludw.* 155—*Blackw.* 298. 1—*Gars.* 215. *a. and* 4 *on the right hand*—*Dod.* 260. 1—*Lob. Obs.* 445. 2, *and Ic.* i. 770. 2—*Ger. Em.* 755. 4—*Blackw.* 526—*Trag.* 149—*Ger.* 616. 4—*J. B.* iii. 118—*Pet.* 19. 10.

Stems trailing, hairy, (about a foot long. E.) *Leaves* doubly winged; wings rather distant; little wings sometimes with two or three clefts, pointed, hairy, greyish. *Flowers* solitary. *Calyx* hairy, with broad, shining, membranous edges. *Florets* of the circumference somewhat elliptical, either entire, or with two or three teeth; those of the centre yellow. Woodw.

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* Toads are said to be partial to this plant. It is very ungrateful and displeasing to bees. Goats and sheep are not fond of it. Horses, cows, and swine refuse it. Linn. It frequently blisters the skin of reapers and of children who happen to gather it; (the acrimony is occasioned by an exudation from minute glands perceptible with a microscope. E.) The heads, rubbed between the fingers, smell disagreeably. (It is a strong and active bitter; a decoction given in the dose of a tea-cup full, will produce copious vomiting and perspiration; and powerfully promotes the action of an emetic. Its reputed efficacy in rheumatism is owing to its sudorific effect. A weak infusion nauseates the stomach, and produces a determination to the skin. Barton's Mat. Med. U. S. Similar effects have been reported by Laugiish. It is one of the troublesome weeds which over-run corn-fields, and ought to be extirpated by more diligent husbandry. E.)

COMMON CHAMOMILE. SWEET CHAMOMILE. (as imparting the smell of *μηλοι*, an apple. Welsh: *Milwydd; Camri cyffredin.* E.) (Open commons; E.) boggy pastures. In Cornwall so plentiful that you may scent it in riding past. Sunny meadows and pastures. Hudson. On the green at Pengwary, Redruth, and other old common pastures in the western part of Cornwall, where it is much finer scented than in gardens. Mr. Watt. Park at Oatlands, Surry. Mr. Woodward On the road from Hedgeford to Stafford, near the direction post. Mr. Pitt. (In front of Lints Green Hall, Durham, between the house and the turnpike. Mr. Waugh. Terrington Common, Yorkshire. Teesdale. Frequent on Commons in the Weald, Sussex. Mr. Borrer. Bot. Guide. South Leigh Heath, near the Hill Houses, Oxon. Dr. Sibthorp. A little to the south of Lowestoft church, Suffolk. On Hounslow Heath in abundance. Also in several parts of Norfolk. Sir J. E. Smith. On Haldon, Devon, plentiful. Rev. J. Pike Jones. Hanley Common, and Malvern, Worcestershire. Rufford, in Purton. Near Pennon deer park, on Rhôs fawr, &c. Anglesey. Welsh Bot. E.) P. Aug.—Sept.*

Var. 2. *Nudum.* Florets of the circumference wanting.

Dod. 260. 2—*Lob. Obs.* 446. 1, *and Ic.* i. 771. 2—*Ger. Em.* 754. 2—*Park.* 86. 2—*J. B.* iii. *a.* 119. 2—*H. Ox.* vi. 12. 3—*Ger.* 615. 2.

Chamæmelum luteum capitulo aphyllo. R. Syn. 185.

(Like the other species of this genus, it is sometimes observed with double flowers. E.)

A. MARIT'IMA. Leaves winged, bipinnatifid, acute, somewhat hairy, fleshy, dotted: stem prostrate: calyx rather tomentose: (scales of the receptacle prominent, sharp-pointed. Sm. E.)

Kniph. 10—(*E. Bot.* 2370. E.)—*J. B.* iii. *a.* 122. 1—*Till. Pis.* 19. 3.

Stems (a span long, E.) widely prostrate, smooth, purplish. *Leaves* winged, cut, naked, sprinkled with hollow dots, more closely toothed towards the base, with a purplish, elevated, transverse line beneath the base. *Fruit-stalks* terminal, solitary, somewhat scored, downy, thicker above. Linn. *Florets* in the centre yellow, (forming a flattish dish. *Seeds* membranous at the edge. Smith observes that the scales of the receptacle distinguish it at once from *Pyrethrum maritimum,* not to mention the hoariness of the herbage. E.)

SEA CHAMOMILE. Meadows on the sea coast. A. July—Aug.

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* The leaves and flowers have a strong, not ungrateful, aromatic smell, and a bitter nauseous taste, probably arising from an essential oil. An infusion of the flowers is often used as a stomachic, and antispasmodic. In large quantities, it excites vomiting. The powdered flowers, in large doses, have cured agues, even when the bark had failed. Both the leaves and flowers possess very considerable antiseptic properties, and are therefore used in such fomentations and poultices. From their antispasmodic powers, they are frequently found to relieve pain, either applied externally, or taken internally. Ray recommends the flowers in calculous cases. (The single wild flowers are more efficacious than the double ones cultivated in gardens. Chamomile, (which may easily be propagated by slips planted about a foot apart from each other,) was formerly used as a cover for walks, odoriferous to the tread, which, when mowed and rolled, looked well for some time, but, being subject to decay in large patches, they have been abandoned as unsightly. E.)

(2) (*Flowers entirely yellow.* E.)

A. TINCTO'RIA. Leaves bipinnatifid, serrated, downy beneath: stem corymbose erect: seeds crowned with a membranous undivided border. Sm. E.)

(*E. Bot.* 1472. E.)—*Kniph.* 12—*Blackw.* 439—*Fl. Dan.* 741—*Ger.* 607. 3—*Matth.* 909—*Burr.* 465—*Clus.* i. 332. 2—*Ger. Em.* 747—*Pet.* 19. 7—*Fuchs.* 26—*J. B.* iii. *a.* 122. 2—*Trag.* 152—*Gars.* 419.

Stem (twelve to twenty inches high, E.) scored, slightly hairy, much branched. *Leaves*, the *lower* winged; *wings* spear-shaped, toothed, slightly hairy and green above, sea-green underneath; lower wings short, distant, toothed; upper wings wing-cleft; mid-rib broader than the wings; *upper leaves* wing-cleft; mid-rib broad, toothed; wings irregular, strap-spear-shaped, toothed; *uppermost leaves* sometimes simply toothed. *Fruit-stalks* long, naked, scored, slightly hairy, terminating the stem and branches, each with one flower. *Calyx* tiled; scales numerous, the outer of various lengths, spear-shaped, hairy, with a green line along the back, white and shining at the edge. *Florets* of the circumference broad, with three teeth. Woodw. *Calyx* hollowed on the underside round the fruit-stalks, downy. (*Blossom* entirely yellow, more than an inch over. E.)

OX-EYE CHAMOMILE. (YELLOW OX-EYE. E.) Sunny pasture, but not common. On a bank near the river Tees, not far from Stogburn, Durham. Ray. Mr. Robson informs me it is not now to be found there. (Mr. Dickson has more recently gathered it in Essex; and Mr. G. Don, near Forfar. E. Bot. Sunderland Ballast Hills. Mr. Weighell. A single plant found by the road side near St. Anthony's colliery, Durham, by Mr. Callender. Bot. Guide. E.) P. July—Aug.*

ACHILLE'A.† *Recept.* chaffy: *Down* none: *Calyx* egg-shaped, tiled: strap-shaped florets five to ten, somewhat heart-shaped.

A. PTAR'MICA. Leaves strap-spear-shaped, embracing the stem, finely serrated, smooth.

Curt. 343—(*E. Bot.* 757. E.)—*Kniph.* 5—*Ludw.* 118—*Walc.*—*Fuchs.* 639—*J. B.* iii. *a.* 147—*Trag.* 159—*Lonic.* i. 235. 2—*Pet.* 19. 3—*Fl. Dan.* 643—*Gars.*—*H. Ox.* vi. 12, *row* 3. 1, *f.* 1—*Blackw.* 276—*Clus.* ii. 12. 1—*Dod.* 710. 1—*Lob. Obs* 243. 3, *and Ic.* i. 455. 2—*Ger. Em.* 606. 1—*Ger.* 483. 1—*Park.* 859, *f.* 1—*Matth.* 585.

(*Root* creeping. *Stem* erect, one to two feet high, smooth. *Leaves* smooth, undivided. *Flowers* about half an inch in diameter, in a flattish terminal corymb; the rays short, truncate, white as is also the disk. Grev. Serratures of the leaves terminated by whitish bristly teeth. E.)

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* The flowers afford a remarkably clear and good yellow dye. Those of *Chrysanthemum segetum* resemble them much in appearance, but experience proves they will not answer the same purpose. Horses and goats eat it. Sheep are not fond of it. Cows and swine refuse it.

† (From ACHILLES, reported to have studied plants under Chiron, and to have extracted vulnerary virtues from this herb. E.)

SNEEZE-WORT YARROW. (GOOSE-TONGUE. Irish: *Luss Corrain.* Welsh: *Ystrewlys; Tafod yr wydd.* Gaelic: *An cruai'-lus.* E.) Moist meadows, shady places, and balks of corn-fields. P. July—Aug.[*]

Var. 2. *Fl. pleno.* Flowers double.

Clus. ii. 12. 2—*Ger. Em.* 606. 2.

Leaves truly spear-shaped, serratures deeper, as in the figures of H. Ox. Dod.; &c. Woodw. All the florets except a few in the very centre, strap-shaped.

Small Holme Island in Winandermere, and at Chilmark, Wiltshire. Ray. At Ripton; found by Mr. J. Whitelocke, nurseryman at Fulham. Mr. Woodward.

(*Achillea serrata.* Retz. Willd.

E. Bot. 2531.

In *foliage* scarcely differing from *A. Ptarmica,* and in the *flowers* chiefly by the somewhat reduced size of the florets of the circumference. The character of *serrated* seems to apply equally to both.

Gathered near Matlock. E. Bot. E.)

A. MILLEFO'LIUM. (Leaves doubly winged, hairy: segments of the wings strap-shaped, toothed, pointed: stem furrowed. E.)

(*E. Bot.* 758. E.)—*Kniph.* 5 *and* 7—*Ludw.* 67—*Fl. Dan.* 737—*Woodw.* 64—*Anders*—*Blackw.* 18—*Clus.* i. 331—*Dod.* 100. 2—*Lob. Obs.* 431. 1, *and Ic.* i. 747. 2—*Ger. Em.* 1072. 2—*H. Ox.* vi. 11. 14—*Pet.* 19. 4—*Ger.* 914. 2—*Lonic.* i. 240. 1—*Gars.* 388—*Ger.* 914. 1—*Fuchs.* 727—*J. B.* iii. *a.* 136—*Trag.* 477—*Matth.* 1142—*Dod.* 100. 1—*Lob. Obs.* 430. 2, *and Ic.* i. 747. 1—*Ger. Em.* 1072. 1—*Park.* 694. 1—*H. Ox.* vi. 11. 6—*Matth.* 1141.

(*Root* creeping, putting forth runners. *Flowers* crowded together, small. *Disk* convex. Fl. Brit. E.) *Stem* angular, downy, (a foot high. E.) *Fruit-stalks* downy. *Leaves* (more or less downy, particularly underneath, E.) segments mucronate. *Flowers* in a corymb. *Blossom* white, reddish, or even purple. *Calyx* scales downy, membranous at the edges. *Florets* of the circumference five; *border* nearly circular, slightly cloven into three; those of the centre fifteen or more, but not more than four or five expanding at once.

COMMON YARROW OR MILFOIL. (THOUSAND-LEAVED GRASS. Irish: *Ahair talhum.* Welsh: *Gwilffrai; Llys y gwaedlif.* Gaelic: *A'chaithir-thalmhain; An carr'-thalmhain; Lus ch'osgadh-na fola.* E.) Meadows, pastures, and road sides. P. June—Aug.[†]

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[*] The roots have a pungent biting taste, (and when chewed occasion a copious discharge of saliva, thereby relieving tooth ach. They are often sold in the shops for the Pellitory of Spain. E.) The young tops are sharp and pleasant in spring salads. The powdered leaves excite sneezing, (supposed partly to be occasioned by the mechanical action of the *spicula.* E.) Horses, cows, sheep, goats, and swine eat it. (The double variety, sometimes called *Batchelors' Buttons*, is considered ornamental in gardens, but it should be admitted with caution, the creeping roots extending more rapidly than may be desirable. E.)

[†] The flowers yield an essential oil. The leaves (and flowering heads, E.) are celebrated by the Materia Medica writers (as stimulant and stomachic in infusion, E.) but little attended to at present. (The leaf loosely rolled together, and put up the nostrils, causes, by an external blow of the finger, a bleeding at the nose, more or less copious, according to the state of the vessels within; whence the vulgar name *Nose-bleed.* E.) Sheep and swine eat it. Horses, cows, and goats are not fond of it. (Though the pro-

(A. **TOMENTO'SA.** Leaves doubly winged, woolly: segments crowded, strap-shaped, acute: corymbs repeatedly compound.

E. Bot. 2532—*Curt. Mag.* 498.

Foliage less cut and more woolly than Common Yarrow. *Flowers* golden yellow, their *stalks* woolly. Aromatic when rubbed.

WOOLLY YELLOW MILFOIL or YARROW. *A. tomentosa.* Linn. *Millefolium luteum.* Ger. Em. On hilly pastures in the west of Scotland (discovered, according to Hooker, by Mr. Hugh Ross, on Spittle Hill, north-west of Balvie, Dumbartonshire; and on hills near Paisley. Mr. Hopkirk. Also grows in Ireland. E.) E. Bot. P. Aug. E.)*

FRUSTRANEA.

CENTAU'REA.† *Recept.* bristly: *Down* feathery or hair-like: *Florets* of the circumference tubular, irregular, longer than those of the disk.

(1) *Scales of the calyx serrated with fringe.*

C. **CYA'NUS.** Calyx scales serrated: leaves strap-shaped, very entire; the lower ones toothed.

Curt.—*Fl. Dan.* 993—*E. Bot.* 277—*Kniph.* 6—*Ludw.* 55—*Sheldr.* 44—*Blackw.* 270—*Walc.*—*Dod.* 251. 1—*Lob. Obs.* 296. 1, *and Ic.* i. 546. 2—*Ger. Em.* 732. 2—*Park.* 482. 2—*Pet.* 22. 4—*Fuchs.* 428—*J. B.* iii. 21. 3—*Ger.* 592. 2—*Trag.* 56—*Lonic.* i. 182. 1—*Matth.* 508—*H. Ox.* vii. 25. 4.

Stem one to two feet high, angular, firm, slightly cottony, branched upwards. *Leaves* numerous, whitish and cottony underneath, with three parallel ribs. *Branches* single-flowered. *Calyx*, scales spear-shaped, the outer green, tinged with purple, cottony, sharply serrated; serratures smooth, membranous, purplish without, white within, sometimes white on both sides; the inner entire. *Florets* of the circumference, segments spear-shaped, pointed; those of the centre, segments rather shorter than the anthers. *Down* short, hair-like. Woodw. *Filaments* surrounded just below the anthers with a fringe of silvery glandular hairs. *Anthers* almost black, horny at the top. *Style* a little hairy just beneath the summit. *Summit* cloven. *Blossom* generally a fine bright blue, sometimes white, or beautiful purple.

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ductive and nutrient properties of Yarrow are inferior to those of other plants equally adapted to light soils, Mr. Sinclair considers it an indispensable ingredient of the most fattening and healthy pastures, in which he suspects it may not be destitute of sanative effects. We are assured by W. P. Taunton, Esq. in Hort. Gram. that the prevalence of this plant indicates a siliceous soil. It is sometimes used in the north of Europe as a substitute for hops, and also supposed to increase the inebriating quality of malt liquor. E.)

* (It serves to decorate rock-work in gardens, but will not bear wet or shade. Sm. E.)

† (From the CENTAUR, Chiron, who is said to have established the reputation of this herb as a vulnerary. E.)

BLUE-BOTTLE, or CORN-FLOWER. KNAPWEED. (HURT-SICKLE. Scotch: Blue-Bonnets. Irish: *Gormon.* Welsh: *Crammenog yr yd.* E.) Corn-fields. A. June—Aug.*

(C. JA'CEA. Calyx-scales membranous, torn, lower ones pinnatifid: leaves strap-spear-shaped; radical ones broader, toothed.

E. Bot. 1678—*Fl. Dan.* 519.

Lower-leaves obovato-lanceolate, petiolate, toothed; *upper* ones entire, sessile. *Scales* of the *involucre,* (calyx,) pale brown, shining; the outer ones deeply pinnatifid; the inner or uppermost torn, in which respect it differs greatly from *C. nigra.* Hook. *Radiant florets* numerous, large, light crimson, spreading; those of the *disk* much shorter, rather darker. *Seeds* to the latter only, inversely conical, crowned with a simple row of very short black bristles. Sm.

BROWN KNAPWEED. Moist meadows and groves. Sent from Ireland in 1796 by Mr. Templeton. In Sussex. Mr. Borrer. In a plantation at Newbigging Muir, near Belmont castle 1811. Mr. Young. Invercarrity by Kinnordy, Kerriemuir. C. Lyell, Esq. Hook. Scot. Willington Ballast Hills. Mr. Winch. P. Aug.—Sept. E.)*

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* The expressed juice of the petals makes a good blue ink; it stains linen of a beautiful blue, but the colour is not permanent in the mode it has hitherto been applied. Mr. Boyle says, the juice of the central florets, with the addition of a very small quantity of alum, makes a lasting transparent blue, not inferior to ultramarine. Gent. Mag. 1748. Cows, goats, and sheep eat it. Horses and swine refuse it. (Varieties of divers colours are often introduced as hardy annuals into flower gardens. Assuredly the imaginative powers of female intellect are never more amiably or more successfully employed, than in illustrating the beauties of nature. With how much truth and elegance does the authoress of "Flora Domestica" depict our present species. "The beauty of flowers does not lie wholly in their vivid colours and bright contrasts: observe the Corn-flower,—what a beautiful coronet of sky-blue florets! every floret a fairy vase, in the depth of which nature prepares sweet nectar for the butterfly and the bee! But when these have disappeared, there is beauty also in the winged children they have left, rocking each other in its green cradle. In some of the species, these winged offspring are peculiarly beautiful; they seem like fairies' shuttlecocks, elegantly variegated at the base, and set with the most delicate feathers of a jet black; so delicate are these feathers, that to the unassisted eye they show like hairs. Then examine how the pistil is affixed to its centre; how one minute groove is fitted to another, with a nicety of mechanism, so finished, so beautiful! What human hand could form one seed like this?—this little seed, which, in its minute and exquisite perfection, is scattered abroad by thousands, unnoticed and unseen!" Our plant was named *Cyanus* after a youthful devotee of Flora, whose chief occupation seems to have been loitering in the fields and weaving garlands with this and other corn-flowers; perchance, occasionally permitting a truant thought to wander into a tender vein, though never inspiring sweeter lays than those of the English Improvisatrice.

"There is a flower, a purple flower,
Sown by the wind, nursed by the shower,
O'er which Love has breathed a powerful spell,
The truth of whispering hope to tell.
* * * * *
* * * * *
Now, gentle flower, I pray thee tell,
If my lover loves me, and loves me well;
So may the fall of the morning dew
Keep the sun from fading thy tender blue."

As an agriculturist, alluding to the gay Blue-bottle, Corn Poppy, May-weed, and Corn Marigold, beautiful but troublesome plants, Holdich justly remarks, in his Essay on Weeds, "The above class, with their gaudy colours, like heralds of spring and summer, proclaim bad farming to the landlord, the tenant, and the passenger; and announce the neglect of using clean seed-corn, judicious manuring, fallowing, the row culture, and horse-hoe husbandry." E.)

C. **NI'GRA.** Calyx scales egg-shaped, fringe hair-like, upright: lower leaves lyrate, angular; upper ones ovate, nearly entire.

Var. 1. Flowers without rays.

Fl. Dan. 996—*E. Bot.* 278—*Walc. Reich. Fl.*—*Clus.* ii. 7. 2—*Dod.* 124. 2—*Lob. Obs.* 292. 3, *and Ic.* i. 541. 1—*Ger. Em.* 727. 1—*Park.* 468. 1—*H. Ox.* vii. 28, *row* 2. 1—*Pet.* 22. 8—*J. B.* iii. *a.* 27.

Resembling *C. Jacea,* but without neutral florets in the circumference. Linn. *Stem* angular, scored, slightly cottony, often tinged with purple. *Branches* alternate, upper ones rising above the stem, thickest towards the top, single-flowered. *Leaves* wing-cleft or toothed, sometimes entire, spear-shaped, sessile, more or less cottony. *Calyx,* outer scale spear-shaped, dark purple, almost black, with a long fringe, hairy; the middle ones yellow, strap-shaped below, spear-shaped and fringed at the end; the inner whitish, smooth, shining, strap-shaped, terminated by a broad, roundish, purple, little scale, convex without, concave within, ragged, not fringed. *Florets* all alike. *Tube* whitish, long. *Border* purple, longer than the anthers. *Style* shorter than the anthers, with a downy ring beneath the summit. *Summit* slightly cloven. Woodw. *Upper leaves* either egg or strap-shaped, sometimes entire.

Var. 2. *Double.* Florets all radiate.

This variety is common in Wiltshire, as I learn from Mr. Norris; and Mr. Stackhouse informs me that it is more frequent in Cornwall, and the west of England, than the sort without rays. It has sometimes been mistaken for *C. Jacea,* but in that the scales of the calyx are thin, membranous, or scariose, and ragged at the edges, not with a regular fringe of stiff black bristles as in this.

Outer florets purple, radiating, divided nearly half way down into five equal strap-shaped segments, without stamens or pistils. Other radiating florets exactly resembling these, but furnished with stamens and pistils. *Central florets* white; anthers and summits purple. *Stem* fluted, cottony. *Lower leaves* spear-shaped, toothed, somewhat hairy; *upper leaves* strap-shaped, very entire.

(Walbottle, Dean; also near Walker, Northumberland. Mr. Winch. Between Ceint and Berw, Anglesey. Welsh Bot.

The Rev. Hugh Davies also distinguishes another var. with a divided downy leaf; among gorse on Tower-hill farm, Anglesey. E.)

BLACK or LESSER KNAPWEED. (BLACK MATFELLON. BULL-WEED. Welsh: *Pengaled leiaf benddu.* E.) Meadows and pastures. P. July—Aug.†

C. **SCABIO'SA.** (Calyx scales ovate, fringed, somewhat downy: leaves wing-cleft: segments spear-shaped, rather hairy, slightly toothed. E.)

E. Bot. 56—*Matth.* 969—*J. B.* iii. *a.* 32. 2—*Ger.* 588. 2, *and* 583. 5—(*Pet.* 22. 7. E.)

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* (The herb steeped in alum water, before the flowers expand, dyes a fine yellow. Linn. E.)

† (A decoction of the hard heads of this plant have afforded at least a temporary relief in cases of diabetes, by diminishing the morbid secretion, and destroying its sweetness; but for a remedy for this cruel disease more worthy the attention of the faculty, vid. Withering's Memoirs and Tracts, vol. ii. p. 490. E.)

Root-leaves winged, on long leaf-stalks, with a winged mid-rib; wings egg-shaped, toothed, frequently with wing-cleft appendages at the base, the terminal one very large, confluent with the next pair; *stem-leaves* wing-cleft; segments spear-shaped, mostly entire. *Flowers* single, terminal. *Calyx* globose, (reflexed after the seeds are blown away, and rendered conspicuous by the shining silvery hue of its inside; Sm. E.) scales closely tiled, in several rows, egg-shaped, green, nearly smooth, fringed, tipt and edged with black. *Florets* tubular: those of the circumference without stamens or pistils, reddish purple, scored; segments four, sometimes five. *Style*, pale below, purplish upwards, with a downy ring beneath the cloven summit. *Seeds* oval, brown, compressed, shining; viewed with a glass slightly hairy. *Down* yellowish, bristly, as long as the seed. Woodw. *Stem* nearly cylindrical, scored, (two or three feet high. E.) *Florets* of the centre marked on the outside with five dark purple lines, the tube and distended border filled with a honey-like liquor. *Filaments* a little woolly. *Anthers* shining, purple. *Blossoms* purple, sometimes white, large and showy. *

(Varieties have been observed differing considerably in the breadth and subdivision of their leaves. E.)

GREATER KNAPWEED. MATFELLON. (Welsh: *Crammenog fwyaf.* E.) Borders of corn-fields. P. July.

(2) *Calyx spinous; thorns compound.*

C. CALCIT'RAPA. (Flowers lateral, sessile: calyx doubly spinous: leaves pinnatifid, toothed: stem hairy, widely spreading. E.)

E. Bot. 125—*Kniph.* 11—*Ger.* 1003. 1—*Col. Phyt.* 24—*Clus.* ii. 7. 3—*Dod.* 733—*Lob. Obs.* 482. 2, *and Ic.* ii. 11. 2—*Ger. Em.* 1166. 1—*J. B.* iii. *a.* 89—*Park.* 988. 1—*Pet.* 21. 11—*Ger.* 1003. 2—*Lonic.* i. 72. 2.

(*Florets* of the circumference scarcely longer than the disk, not quite regular. *Seeds* inversely egg-shaped, variegated, shining. Fl. Brit. *Stem* much branched, leafy, downy. *Leaves* sessile, hairy, beset with prickly teeth; lower ones stalked. *Bloss.* purple, sometimes white, lateral, sessile. *Calyx* egg-shaped, with spreading, whitish spines, fringed at the base with smaller prickles. *Filaments* peculiarly irritable. *Herbage* gives out a bitter, glutinous exudation. E.)

STAR THISTLE. STAR KNAPWEED. Barren meadows and road sides. Yarmouth Denes, near the sea, with a *white blossom,* frequent. Mr. Woodward. Bethnal Green. Mr. Jones. Sandsend, near Whitby. Mr. Robson. Road sides north of Bedford, common. Mr. Pitt. (West end of St. Anthony's Ballast Hills, Northumberland. Mr. Winch. E.) A. July—Aug.

C. SOLSTITIA'LIS. Flowers terminal, solitary: calyx doubly spinous: stem winged from the decurrent, thornless, spear-shaped, leaves: root-leaves lyrate.

E. Bot. 243—*Kniph.* 8—*Dod.* 734. 1—*Ger. Em.* 1166. 2—*Park.* 989. 4—*Pet.* 21. 12—*Col. Ecphr.* 31—*Lob. Adv.* 372, *and Ic.* ii. 12. 1.

Root fibrous. *Stem* two feet high, branched, spreading. *Root-leaves* lyre-shaped, tapering: lateral segments spear-shaped, toothed, the terminal one winged, triangular, halberd-shaped: *stem* and *branch-leaves* very entire, short, waved, sprinkled with a white cobweb-like wool. *Flowers* terminal, solitary. *Fruit-stalks* very long, leafy. *Calyx* egg-shaped, without any leaf at the base: scales white, those which surround the base longest, only toothed at the base, with hand-shaped, short, and nearly equal thorns, the rest with awl-shaped thorns as long as the calyx, and armed on each side with lesser thorns. *Blossoms* yellow. Linn. (*Herb* very bitter, slightly viscid. E.)

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* (A troublesome weed to the agriculturist in certain districts, and only to be eradicated by breaking up the ground so infested. E.)

ST. BARNABY'S THISTLE. YELLOW STAR-THISTLE or KNAPWEED. (Both the Latin and English trivial names are supposed to allude to the season of flowering, though not peculiarly appropriate to this species. E.) Corn-fields and hedges. Not far from Cirencester, Gloucestershire; and Northfleet, Kent. In a field at Arminghall, near Norwich. Mr. Crowe. Linn. Tr. ii. 236. (Near St. Edmund's hill, Bury. Rev. Dr. Webb. Eng. Fl. Near Dartford. Mr. W. Peete. E.) A. July—Aug.

NECESSARIA.

CALEN'DULA.* *Recept.* naked: *Down* none: *Calyx* of many nearly equal leaves: *Seeds* membranous.

C. ARVEN'SIS. Seeds boat-shaped, prickly; the innermost crowded together, incurved: the outermost upright, caudate.

H. Ox. vi. 4. 6—*Tabern.* 713—*Ger.* 603—*J. B.* iii. 103.

Nearly allied to *C. officinalis*. *Leaves* somewhat toothed, but heart-spear-shaped, not spatula-shaped. Linn. (*Stem* leafy, three to five inches high. E.) *Leaves*, the upper ones heart-shaped, lower ones strap-egg-shaped, all of them embracing the stem. *Flowers* yellow, not near so large, nor of so deep a colour as those of *C. officinalis*, (whose seeds are *all* incurved. E.)

FIELD MARIGOLD. On Ballast Hill, Sunderland. Mr. Robson. On the shores of the harbour at Falmouth. (On the Den at Teignmouth. B. Botfield, Esq. A. June—Sept. E.)†

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* (From *Calendæ*, the first of every month; descriptive of its almost perpetual inflorescence during every month in the year. E.)

† "The *Mary-budde* that shutteth with the light,"
was formerly held in repute as a cordial; and according to an established authority, "no brothes are well made without dried Marigolds,"

"Fair is the *Marigold* for pottage meet." Gay.

For which purpose, especially in Holland, the petals are picked, kept dried in casks, and sold in the shops. The English house-wives were likewise wont to reserve a corner of the garden for this herb. Why poets have almost invariably connected the plant with melancholy associations is not very obvious; but so it is:

"As emblem of my heart's sad grief,
Of flowers, the *Marigold* is chief."

Various others, especially of the Syngenesia Class, follow the example of

"The *Marigold*, that goes to bed with the sun,
And with him rises weeping:"

or, as the same habit is still more elegantly expressed,

"The flower enamoured of the sun,
At his departure hangs her head and weeps,
And shrouds her sweetness up, and keeps
Sad vigils like a cloistered nun,
Till his reviving ray appears,
Waking her beauty as he dries her tears."

Lines scarcely surpassed by Shakspeare himself:

"Her eyes like *Marigolds* had sheathed their light,
And canopied in darkness sweetly lay,
Till they might open to adorn the day."

From the habit above noticed this flower has obtained the designation of *Solis-sponsa*, Spouse of the Sun; and, perhaps, with at least as much propriety as

"The proud giant of the garden race,"

which, if equally susceptible, is prevented the like manifestation by a peculiar rigidity, and which sustains its usual appellation merely from the resemblance of its expanded flower to the great luminary. The Marygold and Sun-flower have, at different periods, reciprocally interchanged names, which will account, in some little degree, for the discrepancy of certain poetical descriptions. The loyal and orthodox George Wither, of the sixteenth century, whose fair boast it was,

"That from every thing he saw
He could some invention draw,"

thus improves our subject.

"When with a serious musing I behold
The grateful and obsequious *Marygold*,
How duly, every morning, she displays
Her open breast, when Titan spreads his rays;
How she observes him, in his daily walk,
Still bending tow'rds him her smell slender stalk;
How, when he down declines, she droops and mourns,
Bedew'd, as 'twere with tears, till he returns;
And how she veils her flowers when he is gone,
As if she scorned to be looked on
By an inferior eye; or did contemn
To wait upon a meaner light than him:
When this I meditate, methinks the flowers
Have spirits far more generous than ours,
And give us fair examples to despise
The servile fawnings and idolatries,
Wherewith we court these earthly things below,
Which merit not the service we bestow." E.)

This is a very common plant in the corn-fields and vineyards of Portugal, and is used as food for milking cows. The milk yielded by the cows which are fed upon it is very good. When we consider the constant intercourse maintained between Portugal and Falmouth, it is not improbable that the seeds of the plants I found might have been imported from thence. (Thus have various exotics been introduced, and in time become naturalized; as illustrated by other foreign plants now to be observed on Ballast-hills, near Sunderland, and like situations. According to Dr. Penneck, in Jones's Botanical Tour, in the mild climate of Penzance even the *Acanthus* has fortuitously appeared. E.)

CLASS XX.

CRYPTOGĂMIA.*

MISCELLANEÆ.†

EQUISE'TUM. *Fructifications* forming an egg-oblong, terminal spike.

LYCOPO'DIUM. *Capsules* axillary, solitary, naked, kidney-shaped, with one cell, and elastic valves.

PILULA'RIA. *Capsules* four-celled, globular, sessile in the bosom of the leaves at each joint.

ISOE'TES. Barr. Fl. solitary, within the base of the inner leaves.
Fert. Fl. solitary, within the base of the outer leaves: *Capsules* two-celled, (one-celled. Hook. E.)

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* (In the plants of this Class, the stamens and pistils are either imperfectly, or not at all, known; or not to be numbered accurately. The Orders are all natural families, in general acotyledonous; but certain peculiarities of the *Filices* seem to indicate an approach to the monocotyledonous organization. Excepting a few Genera included in the first and second Orders, Cryptogamous plants are either so minute in themselves, or in their efflorescence and organs of fructification, that for their investigation the microscope becomes essentially requisite; and with its aid, so manifold and surprising are the beauties of colour and conformation brought to light, that no genuine admirer of nature will be deterred from prosecuting researches into what may truly be termed a new creation. Subordinate as these tribes of vegetables may appear to our limited conceptions, they doubtless constitute an indispensable link in the great chain of being; and though the ignorance of some, and the indolence of others, may have frequently propounded the query, "Quorsum tantum laboris in rebus adeo tenuibus insumptum? *cui bono* hæc omnia?" the more enlightened student will readily acquiesce in the just reply, "*Ut cognoscamus sapientiam* CREATORIS, quæ in minimis, non minus elucet, quam in magnis operibus." Dillenius.

And thus does it behove the higher intelligence,

"To trace, in nature's most minute design,
The signature and stamp of power divine,
Contrivance intricate, expressed with ease,
Where unassisted sight no beauty sees." Cowper. E.)

† (The four Genera of this first Order, must be allowed to constitute a somewhat incongruous assemblage, very appropriately named. Some Botanists have proceeded to a further subdivision, forming from them nearly an equal number of Orders, according to a natural system; and a recent authority has included them among the *Filices*, from which, in general habit, they widely differ. E.)

FILICES.*

(1) *Capsules without an elastic ring; in Spikes.*

OPHIOGLOS'SUM. *Capsules* united by an enveloping membrane, so as to form a two-rowed, jointed spike.

OSMUN'DA. *Capsules* distinct, two-valved, forming a bunch-like spike.

(2) *Capsules roundish, on pedicles, encompassed by a jointed elastic ring; and opening irregularly into two parts.*

ACROS'TICHUM. *Capsules* covering the whole under surface of the leaf.

POLYPO'DIUM. *Capsules* forming distinct roundish spots on the under surface of the leaf.

ASPLE'NIUM. *Capsules* forming straight scattered lines on the under surface of the leaf.

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* (" The production of perfect germinating seeds, contained in capsules, and consequently produced by impregnated fertile flowers, is as clear in Ferns as in Mosses, though nothing is certainly known of their stigmas, any more than of their anthers. We are nevertheless content to plead ignorance on the subject, and to presume, by analogy, that such parts may exist, rather than to assume the idea of some other mode of impregnation hitherto unknown, which would be going contrary to the first principles of philosophy; or, what is worse, returning to the old gratuitous fancies of spontaneous generation." Sm. The opposite conclusions of other eminent phytologists have already been noticed *passim*. The seeds of these epiphyllospermous plants are so minute as to have been overlooked by the older Botanists; and, according to vulgar notion, were only to be detected, if at all, at the precise hour of the night on which St. John the Baptist was born; and whoever possessed them, had the power of becoming invisible. Hence in the play of Henry IV,

" We steal as in a castle, cock-sure;
We have the receipt for *Fern-seed;*
We walk invisible."

And again,

" I'll seek the shaggy *Fern*-clad hill,
* * * *
And watch mid murmurs muttering stern
The seed departing from the *Fern*,
'Ere wakeful dæmons can convey
The wonder-working charm away." Leyden.

Vestiges of this strange superstition may still be traced in some parts of England.

" The village maids mysterious tales relate,
Of bright midsummer's sleepless nights; the *Fern*
That time sheds secret seeds." Bidlake.

Such were the opinions of the darker ages, but that the real seeds of Ferns are produced by natural process, though in an impalpable powder, ought long since to have ceased to be problematical; and no difficulty will be found in effecting their germination, if sprinkled on a suitable soil, in a proper temperature. Vid. Lindsay in Linn. Tr. vol. ii. and Tr. Hort. Soc. vol. iii. E.)

BLECH'NUM. *Capsules* forming lines adjoining and parallel to the ribs of the leaves.

PTE'RIS. *Capsules* forming a line at the edge of the leaf.

ADIAN'TUM. *Capsules* forming oval spots under the reflexed points of the leaves.

TRICHO'MANES. *Capsules* solitary, inserted on the very edge of the leaf.

MUSCI.*

SPHAG'NUM. *Capsules* smooth, not fringed, covered with a lid; without a veil.

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* (Even at the risk of some little repetition, we cannot refrain from endeavouring to attract the attention, especially of the junior student, to these diminutives, (in stature too humble, as it were, to speak for themselves,) by transcribing a succinct, yet comprehensive, passage, on this interesting subject, from an intelligent writer, who justly observes that, "Mosses, by the inconsiderate mind, are generally deemed an useless or insignificant part of the creation. That they are not, is evident from hence; that He who made them has made nothing in vain; but, on the contrary, has pronounced all his works to be 'very good.' Many of their uses we know; that they have many more which we know not, is unquestionable, since there is probably no one thing in the universe of which we dare to assert that we know all its uses. Thus much we are certain of with respect to Mosses, that, as they flourish most in winter, and at that time cover the ground with a beautiful green carpet, in many places which would be otherwise naked, and when little verdure is elsewhere to be seen; so at the same time they shelter and preserve the seeds, roots, gems, and embryo plants of many vegetables, which would otherwise perish; they furnish materials for birds to build their nests with; they afford a warm winter's retreat for some quadrupeds, such as bears, dormice, and the like; and for numberless insects, which are the food of birds and fishes, and these again the food or delight of men. Many of them grow on rocks and barren places, and, rotting away, afford the first principles of vegetation to other plants, which could never else have taken root there. Others grow in bogs and marshes, and by continual increase and decay fill up and convert them into fertile pastures, or into peat-bogs, the source of inexhaustible fuel to the polar regions. They are applicable also to many domestic purposes; some are used in dying of yarn, and in medicine; others furnish convenient beds; some are useful in tiling of houses, stopping crevices in walls, packing of brittle wares and the roots of plants for distant conveyance. To which may be added, that all in general contribute entertainment and agreeable instruction to the contemplative mind of the naturalist, at a season when few other plants offer themselves to his view." A superabundance of Moss on orchard fruit-trees often becomes a serious evil, and may arise either from too dry a state of the soil, or more frequently, from excessive damp and crowded growth. The only effectual remedy for the latter inconvenience is under-draining and pruning, and occasionally scraping off the unwelcome parasite with a wooden instrument, or with a piece of rough hair-cloth, after soaking rain. It seems not improbable that the astringent quality of Mosses might be applied to useful purposes in the arts. Nor can we enter upon the present Order without acknowledging our obligation to the elaborate "Muscologia Britannica" of Drs. Hooker and Taylor, the professed object of which work is, "to fix this department of Botany upon a firmer basis; and by facilitating the investigation of one of the most beautiful parts of the creation, to place in a clearer light the wonders of the Divine hand." Though we have not materially deviated from the Linnæan Genera, (for, notwithstanding the researches of Muscologists both abroad and at home for half a century, no systematic arrangement has been established which can be

SPLACH'NUM. *Capsule* on a large fleshy receptacle: *Veil* very large.

POLYT'RICHUM. *Capsule* on a very small receptacle: *Veil* hairy.

MNI'UM. *Capsule* with a lid: *Veil* smooth: *Fruit-stalk* not issuing out of a fleshy receptacle.

PHAS'CUM. *Capsule* with a veil, and the rudiment of the lid which does not fall off.

BRY'UM. *Capsule* with a lid: *Veil* smooth:* *Fruit-stalk* terminal, issuing out of a fleshy tubercle.

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deemed altogether unexceptionable;) by embracing, under each species, the experience of the principal modern authorities, and adopting a more general and correct synonymy, the study of this minute tribe will be found to be considerably promoted. It does not appear, as yet, that any other European country affords a greater number of species of Mosses than the British Isles, in which have already been discriminated about three hundred. In Linn. Tr. vol. xiii. may be seen a Memoir by Mr. James Drummond, F.L.S who occupied himself with the seeds or *sporules* of Mosses, and succeeded in raising more than thirty different kinds; proving also that those processes of germinating seed which Hedwig called cotyledons, are by no means analogous to those of Phænogamic plants. The seeds, or *sporules* of Mosses, differ, *in toto*, from the seeds of the more perfect Orders of plants. They have no integument, no embryo, consequently no radicle and plumule, nor are they essentially necessary for the increase of the plant. The sporule is in itself an homogeneous substance, producing indifferently from its surface roots and stems. (Vid. Nees Von Esenbeck in Act. Acad. Nat. Cur. vol. xii.) The simplicity of the general structure corresponds. The Phænogamous plants, and even the Ferns, are furnished with tubular vessels. In the vegetables in question none such appear; *all* their parts are composed of but one cellular form.(*a*) This want of tubular vessels is compensated by the softness, delicacy, and absorbent property of the cellular tissue. No species of Moss is altogether destitute of foliage, not even *Buxbaumia aphylla*. Nor is there a single instance of a petiolated leaf; neither does any Moss exist having hairy foliage, all are glabrous. Though Mosses are so diminutive as in some instances to be scarcely visible to the naked eye; but which are nevertheless as curious and complicated in their structure as the larger kinds; others will be found to attain two feet in length. Their most genial atmosphere is humidity. When crisped by a burning sun, or even dried for the herbarium, a slight shower, or sprinkling with water, will quickly resuscitate them; so remarkable is their power of rapidly imbibing moisture. The Entomologist will not fail to discover among their roots a number of rare insects, as Linnæus elegantly observes in Syst. Veg. "Hæ radices incolarum fovent; ne adurantur a bruma hyberna; ne exsiccantur a Sirio æstivo; ne evellantur a vicissitudine vernali; ne corrumpantur a putramine autumnali." To facilitate the study of this branch of science, in addition to the well-known works of our own countrymen, and the labours of German and French Physiologists already partially adopted; Prof. Hooker especially recommends "Stirpes Cryptogamæ Vogeso-Rhenanæ, auctoribus Mougeot et Nestler," containing eight hundred specimens of as many species; "Deutschland Moose," or a Moss Pocket-book, by H. C. Funck; and similar collections by Mr. Hobson of Manchester, and Mr. Drummond of Forfar, each of two volumes; nor should the fasciculi now publishing at Oxford be omitted: as not only insuring greater accuracy than the best of plates, but as being far less expensive. E.)

* In *B. sessile*, *tectorum*, and *striatum*, the veil is hairy.

(*a*) (For ingenious illustrations, (more immediately connected with a natural arrangement of plants,) of the two grand divisions, viz. *Cellulares*, (Cryptogamous, or Acotyledonous plants,) and *Vasculares*, (Phanerogamous, or Cotyledonous plants,) we would refer to Mag. Nat. Hist. vol. i. 32—136, et seq. E.)

HYP'NUM. *Capsule* with a lid: *Veil* smooth: *Fruit-stalk* lateral, issuing from a tubercle surrounded with scales.

FONTINA'LIS. *Capsule* veiled, sessile, enveloped by the scales of the receptacle.

BUXBAU'MIA. *Capsule* on a fruit-stalk, membranous on one side.

HEPATICÆ.*

MARCHAN'TIA. Barr. Fl. *Calyx* salver-shaped, with numerous anthers imbedded in its disk.

Fert. Fl. *Calyx* target-shaped, flowering underneath: *Capsules* bursting at their tops: *Seeds* attached to elastic fibres.

JUNGERMAN'NIA. (Barr. Fl. sessile: *Capsule* on a stalk, rising from a sheath of four valves: *Seeds* attached to elastic filaments. E.)

TARGIO'NIA. *Calyx* two valved: *Seeds* very numerous, collected into a globe.

ANTHO'CEROS. *Capsules* awl-shaped, two-valved: *Seeds* connected with the valves.

BLA'SIA. *Sheath* cylindrical, protruding globular buds from its base.

RIC'CIA. *Fructifications*, granules buried in the leaf: *Anthers* cylindrical, sessile on the germen, perforated by the style: *Caps.* globular, crowned by the withered anthers: *Seeds* hemispherical, on pedicles.

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* (The particular uses of Liverworts are but little understood ; neither is their delicate structure much more so ; though they have attracted the special attention of several eminent vegetable Physiologists, and have been very beautifully delineated. Nearly as diminutive as the genuine Mosses, like them is their general structure loosely cellular. Vid. vol. i. 349. Probably though in a lesser degree, they may prove astringent, to which quality Dioscorides would seem to allude, when he recommends their application as a stiptic for stanching and abating the inflammation of wounds. Their more general medicinal virtues, as likewise their English and Latin designations, were merely inferential, and derived from the fancied resemblance of these herbs to the viscus they were thus indicated to cure ; for as Gerard reports, with a credulity not uncommon in his age, " It is singular good against the inflammations of the liver." E.)

ALGÆ.*

LI'CHEN. Barren, scattered *warts*.
Fertile, smooth *saucers* or *tubercles* in which the *seeds* are imbedded.

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* (Descending in the scale of vegetable creation, we now proceed to consider the two grand divisions of the present Order, viz. the Lichens, properly so called, (vid. vol. i. p. 353.) and the Submersed Algæ, comprehending the sea weeds. (vid. vol. i. p. 353, 354.) The particular properties of each individual species, so far as our very imperfect knowledge admits, will be found in the usual Notes; but on the general and combined result of the Lichens we may here further observe, that no sooner has a bed for vegetation been in the first instance prepared by the operation of atmospheric phenomena in the decomposition of rocks, than the seeds of these, to the common observer, obscure productions, all but "without form, and void," ever floating in the air, make it their resting place. Their generations occupy it till a finely comminuted earth is formed, which becomes capable of supporting the varied tribes of Mosses: acted upon by light and heat, these imbibe the dew, and convert the constituent parts of the air into nourishment. Their death and decay afford food for more perfect species of vegetables, (deposited by birds, or wafted by the waves of Ocean,) till at length a mould is formed, in which even the trees of the forest can fix their roots, and which is capable of rewarding the labours of the cultivator. The successive steps by which even a common wall becomes covered with vegetation, will illustrate this curious process. First may be perceived a green incrustation composed of the primary germination of various species of *Polytricha*, *Brya*, &c., and when this decays, a very thin stratum of vegetable earth is formed, which, by unceasing accumulation, in course of time forms a soil of sufficient depth for such diminutives as *Draba verna*, and other plants usually found in similar situations. However incompetent may be the finite conceptions of man fully to unravel or comprehend the ways of Providence, either in the visible or invisible creation, every rational effort so to do must equally tend to excite sentiments of devotion and gratitude, as to suppress the presumptuous aspirations of pride and ignorance. These contrivances and manifestations, though to a certain degree inexplicable, are sufficiently obvious to all but the "brute unconscious gaze," and render such pursuits not only desirable as tending to satisfy a rational curiosity, but an imperative duty; for "to undervalue any thing which Infinite Wisdom has formed, is to overlook and contemn the Creator himself. Whatever God has thought proper to create, and to present to our view in the visible world, it becomes man to study and contemplate, that from thence he may derive motives to excite him to the exercise of reverence and adoration, of gratitude and praise." "The numberless astonishing instances of divine agency, which every where present themselves to our view in the scene around us, seem evidently intended to arrest the mind to a consideration of an "ever present Deity;" and I envy not the sentiments or the feelings of that man who imagines, that he stands in no need of such sensible mediums, to impress his mind with a sense of the benevolent care and omnipresence of God."(a)

In the second division of this Order, we must advert to those singularly elegant productions of which we can form but a very inadequate idea from the comparatively few which are at low tides exposed to our observation on their native rocks, or occasionally presented to our view among the rejectamenta on the shore. Those who traverse the sea in ships, and "occupy their business in the great waters," do indeed "see the works of the Lord, and his wonders in the deep;" even when he "thunders in the excellency of his power:" but it remains for the scrutinizing eye of the philosopher to investigate more minutely these recesses of Ocean, wherein the last link in the chain of animated nature will be found to verge in mere vegetable existence; where the surface of the profound abyss exhibits interminable forests of Zoophytes, (or animated plants, as the term

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(a) Vid. an excellent work, by Mr. Thomas Dick, entitled "The Christian Philosopher," Glasgow, 1828.

TREMEL'LA. *Seeds* dispersed through a jelly-like substance.

UL'VA. *Seeds* dispersed through its substance, growing in water; (fronds membranous or gelatinous. E.)

BYS'SUS. *Substance*, wool-like fibres.

CONFER'VA. *Fibres* hair-like, simple or branched, often jointed, growing in water: (or, according to Dillwyn and Smith:

Seeds produced within the substance of the capillary or jointed frond, or inclosed tubercles united with it. E.)

FU'CUS. *Substance* leather-like: *Fruit* globular, capsule-like; or granulations within the substance, with an open pore above them.

FUNGI.*

(1) *Seeds on the under surface.*

MERU'LIUS. *Pileus* with gills underneath, of the same substance with the rest of the plant.

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imports; for these productions, constituting the contiguous extremities of the two kingdoms, wherein the distinctions fade away so gradually,

"Shade unperceived, so softening into shade,"

that different learned naturalists have arranged them under either); emulating, and even exceeding, in fantastic form and diversity of brilliant colour, whatever appears on the more exposed surface of the earth, and, in particular situations, rising from the bosom of the deep, occasionally so densely commingled as actually to obstruct navigation. The more minute animals are ever found to be the most productive, and even these vast compages, which in the course of ages aspire towards the surface of the waters, are themselves the artificial formation and habitation of incalculably numerous reptiles and insects, exceeding in industry and power either the proverbial bee or emmet. These masses are again intermixed, and often crowned, with a profusion of real vegetables; and thus do the two kingdoms of nature co-operate in establishing the basis, not only of rocks and shoals, but eventually of superincumbent islands, while their inmost recesses are teeming with existence, "wherein are things creeping innumerable, both small and great beasts." Whatever has been ascertained in the structure (and economical uses of the Marine Algæ, (which appear to have passed altogether unnoticed by the most intelligent nations of antiquity,) will be found in our fourth volume. It will be only here necessary further to remark, that in the midst of these fastnesses do myriads of fishes deposit their spawn, and there securely do the young inhabitants shelter, till strong enough to encounter the agitations of the more open sea. These same weeds, not improbably, supply various animals with food; and are themselves preserved from violence and a degree of friction from the troubled element, which might otherwise quickly disorganize their delicate texture; by a lubricating glutinosity, (which also may have a tendency to obtund the acrimony of the saline particles,) not very dissimilar to that which facilitates the rapid movements of the finny race. But this nether vegetable world, peopled by countless tribes of animated beings, is but too likely to remain a hidden mystery; unless indeed the art of submarine navigation, as yet in its infancy, should ultimately reward scientific zeal with a sublime disclosure of the wonders of "the fifth day." E.)

* (No sooner have the choicest gifts of Flora disappeared, and the "golden pines of the year" faded away, than a succession of curious productions bedeck the earth, con-

AGAR'ICUS. *Pileus* with gills underneath, of a different substance from the rest of the plant.

FISTULI'NA. *Pileus* with separate tubes underneath: *Seeds* in the tubes.

BOLE'TUS. *Pileus* with united tubes underneath: *Seeds* in the tubes.

HYD'NUM. *Pileus* with solid cylinders underneath: *Seeds* on the cylinders.

HELVEL'LA. *Pileus* on a stem, smooth underneath: *Seeds* on the under surface.

AURICULA'RIA. Flat, membranous, attached when young by the whole under surface: *Seeds* on the upper surface, which becomes reversed as it attains maturity.

(2) *Seeds on the upper surface.*

PEZI'ZA. Cup-shaped or concave: *Seeds* discharged with elastic force from the upper surface only.

NIDULA'RIA. Leathery, sessile, bell-shaped: *Capsules* large, flat, attached to pedicles at the bottom of the bell.

PHAL'LUS. *Stem* supporting a cellular head: *Seeds* in the cells.

(3) *Seeds on every part of the surface.*

CLAVA'RIA. Oblong, upright, club-shaped: *Seeds* emitted from every part of its surface.

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tinuing to present an infinite diversity of structure and form, even to the verge of frost and snow. So that to the intelligent observer, no season throughout the vicissitudes of our variable climate, is altogether destitute of attraction. Though the varied tribes of *Fungi*, (in which the worm alone would seem to luxuriate,) too often pass unnoticed, the more intimately we cultivate their acquaintance, the more obvious will appear their claim to our regard, by the disclosure of novelties which cannot be altogether reconciled by analogy with their phenogamous brethren. (Vid. vol. i. p. 336, et seq.) However obscure, on a superficial view, the evanescent vegetables may seem to be, no created thing should be deemed either too high or too low for the consideration of the philosophic mind; and such will soon become convinced, that neither admirable adaptation, contrivance, nor even beauty, are limited to the more ostensible objects. For, as in the animal kingdom are "things creeping innumerable," from the great leviathan that taketh his pastime in the depths of ocean, to the animalcule, to which a single drop of liquid is a sea! so in the vegetable kingdom, whether we direct our attention to the surprising discoveries of the lynx-eyed micrologist, actually imperceptible to the naked eye, and appertaining to objects of ephemeral duration; or ascending in the scale of existence from these tenants of a day, to the stupendous Banian tree, comparatively coeval with the world itself, whose umbrageous canopy overshadowed the Gymnosophists of old, beneath which the Brahmins yet find a fane, and amid whose cool recesses and inviting vistas thousands of Hindoos simultaneously pay divine honours; in whichever direction we contemplate the wonders of nature, man, vain and presumptuous only in ignorance, cannot fail to recognize the Divine hand, and devoutly to admit that truly "in wisdom they are and were created." E.)

(4) *Seeds in the substance of the plant.*

TU'BER. Fleshy, solid, not becoming powdery; nor opening at the top.

LYCOPER'DON. Firm, fleshy, becoming powdery and fibrous within; opening at the top.

RETICULA'RIA. Pulpy, changing to friable; opening indiscriminately: *Seeds* lodged in interlacing fibres or membranous cases.

SPHÆ'RIA. Fruit spherical, filled with black powder, mostly concealed by an outer coat; opening at the top.

TRIC'HIA. *Capsule* globular, egg-shaped or cylindrical, composed of interwoven fibres: *Stem* fixed to a membranous base.

MU'COR. *Stem* very slender: *Seeds* naked or in capsules at the ends of the stem.

(**URE'DO.** *Capsules* clavated, emitting numerous seeds without fibres intermixed. E.)

MICELLANEÆ.

EQUISE'TUM.* *Spike* club-shaped, egg-oblong: *fructifications* target-shaped, opening inwards.

E. SYLVAT'ICUM. Stem bearing a spike: leaves compound, (curved downwards. E.)

Hedw. Theor. 1—(*E. Bot.* 1874—*Fl. Dan.* 1182. E.)—*Bolt. Fil.* 33—*Ger.* 957, *misprinted* 953. 5—*C. B. Th.* 245—*Park.* 1201. 5—*Bolt. Fil.* 32.

The entire *plant* very much resembling in figure a fir-tree, all its leaves being in whorls. Linn. *Stem* from seven to fifteen inches high, smooth, slightly scored, pale yellowish brown. *Sheaths* of the same colour, but deeper. *Leaves* eight, ten, or fifteen in a whorl, bursting out from the upper knot of the stem. *Fructifications* about fifteen in a whorl towards the bottom of the spike. *Anthers* attached to filaments, which, being breathed upon, coil up, but, becoming dry, expand again. After several expansions and contractions they detach themselves, still contracting when moistened, gradually bending from a straight line into a circle, even before a drop of water come in contact with them. These contractions are often so sudden as quickly to throw the object out of the field of view. When examined under a microscope, presenting the appearance of many leaping insects in active movement.

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* (Compounded of *equus*, a horse; and *seta*, hairs; from the resemblance it bears to a horse's tail.

WOOD HORSE-TAIL. Moist woods and shady places near rivulets and in boggy ground. P. April—May.*

Var. 2. Leaves pointing all one way. R. Syn. 131. 5. This happens when the stem has been trodden down.

Var. 3. Leaves very long and very slender. R. Syn. 131. 6.

In shady and moist situations. It is a variety of *E. palustre*. Bolt. Leaves of a pale yellow green colour. Ibid.

This change in the habit occasionally takes place in both species, and more or less so in almost every plant in similar situations.

E. ARVEN'SE. Fertile stem leafless: barren stem leafy, lying down: leaves in whorls.

Curt. 285—*Bolt. Fil.* 34—(*E. Bot.* 2020. E.)—*Kniph.* 1—*Dod.* 73. 2—*Lob. Ic.* i. 795. 2—*C. B. Th.* 247, *the right hand part of the figure*—*Blackw.* 217. 3 *and* 4—*Fuchs.* 322—*J. B.* iii. 730. 1—*Trag.* 692. 2—*Lonic.* i. 176. 2—*Matth.* 1027—*Cam. Epit.* 771—*Dod.* 73. 4—*Lob. Obs.* 461. 3, *Ic.* i. 794. 2—*Ger. Em.* 1114. 5—*Park.* 1202. 11—*Fuchs.* 322—*J. B.* iii. 729. 2—*Ger.* 956. 3.

Fertile stems appearing before the other; soon decaying. *Barren stems* continuing a long time. Linn. *Barren stems* rough, slender. *Leaves* twelve to fifteen in a whorl, somewhat branched. Leers. *Stalk* from a hand's breadth to a foot high, cylindrical, smooth, jointed, the upper knots farther distant, the lower approaching nearer to each other; each joint terminating in a sheath. *Sheaths* furrowed, wider than the stalk, many-cleft: *segments* spear-shaped, tapering to a point. *Spike* yellowish white, nearly an inch long, the base encircled with a membranous yellowish border. *Fructifications* in whorls, yellowish. Pol. *Stem* when fresh roughish, in moist shady situations smooth and somewhat shining. *Sheaths* in such situations scored with green. *Sheaths* with four teeth corresponding to the angles of the leaves, of the same colour with the leaves. Woodw. *Root* cylindrical, with threads from the joints, stiffish, woolly, dark brown. *Stalk* fleshy, with several cylindrical tubes within, a central one, with nine others three or four times smaller, disposed in a circle round it; and another nine exceedingly minute between them and the central one; yellowish brown, semi-transparent, obscurely marked with nine scores. *Sheaths* somewhat tumid, of a silvery brown, with nine furrows: segments nine, pointed, somewhat approaching. *Stalks*, sheaths furrowed at the stem, cloven one third of the way down: teeth blackish brown at the ends, with very shallow white membranous edges. *Leaves*, the joints of the upper branches frequently three-square, and the joints terminating in three teeth: teeth open. St. The fertile stems not to be distinguished from those of *E. sylvaticum* before the leaves appear, but by observing that the sheaths in *E. sylvaticum* are divided into twelve segments; in this species only into three or four.

CORN HORSE-TAIL., (Welsh: *Rhawn y march yr âr dir*. Gaelic: *Earbull eich*. E.) Moist corn-fields. P. March—April.†

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* (Horses are said to be fond of this species, and in the north of Europe it is sometimes preserved for winter fodder. E.)

† (This plant has a very strong astringent and diuretic quality. If eaten by cows, it occasions an incurable diarrhæa. Med. and Phys. Journ. We presume its action upon the intestines may be chiefly mechanical, considering the sharp rough angles and points which its structure exhibits, and the abundance of flinty earth pervading its cuticle. E. Bot.

E. palus'tre. Stem angular: leaves unbranched.

Bolt. Fil. 35; *Barren plant* 16. 37—(*E. Bot.* 2021—*Fl. Dan.* 1183. E.)—*Lob. Ic.* i. 795. 1—*Ger. Em.* 1114. 4—*Park.* 1200. 3—*Trag.* 694—*Lon.* i. 176. 3—*C. B. Th.* 247, *left hand stem*—*Gars.* 258. *B. fructification*—*Hedw. Th.* 2. 8. 9. 10.

Root black. *Stem* smooth. *Leaves* six to ten, furrowed, smooth, with black scales at the base. Leers. *Barren-leaves* resemble those of *E. arvense*, but the second leaves in that species are four-sided, and the sheaths have four teeth, whilst in this species they are five-sided, and the sheaths have five teeth. Bolt.

Marsh Horse-tail. Puddock (Frog) Pipe in Scotland. (Welsh: *Rhawn y march y gors.* Marshy and watery places. P. June—July.*

Var. 2. *Many-spiked.* Spikes terminating the upper leaves as well as the stem.

Ray. 5. 3. *at p.* 160.

This variety generally arises when the primary stem has been bitten off. Bolt.

E. fluviat'ile. (Sterile stems beset with innumerable, roughish, doubly-angular, branches; flowering ones unbranched, with numerous crowded, deeply toothed sheaths. Sm. E.)

Bolt. Fil. 36. 37—(*E. Bot.* 2022—*Fl. Dan.* 1469. E.)—*Matth.* 1026—*Dod.* 73. 1—*Lob. Obs.* 461. 1, *Ic.* i. 793—*Ger. Em.* 1113. 1—*Park.* 1200. 1—*Ger.* 955. 1—*C. B. Th.* 241—*Blackw.* 217. 1 *and* 2—*Cam. Epit.* 770. *B. C.*—*Gars.* 258. *A.*

(*Fertile stems* appearing first, a foot high, very robust, terminated by an oblong spike, two inches long or more; sheaths numerous, imbricated below. *Sterile stems* two to five feet high, sometimes near an inch in diameter at the base, with a great number of joints, and a profusion of long, simple, verticillate branches. Grev. E.) *Sheaths* of the barren stems surrounded at the top with a well defined blackish brown band: *teeth* lighter brown, smaller and narrower than those of the fertile stems. *Leaves* from three to fifteen inches long, very closely set. This species may be readily known at first sight by its great size, numerous leaves, and whitish stem. Woodw.; (or, on more minute inspection, (as first observed by Mr. J. S. Sowerby) by the five angles of the branches of the sterile stems having each a longitudinal furrow. E.)

Great Water Horse-tail. (*E. Telmateia.* Fl. Dan. Irish: *Irebull. Cait i Callagan.* Welsh: *Rhawn y march afonawl.* Gaelic: *Ear-bull-eich.* E.) Marshy and watery places, sides of rivers, ditches, pools, and lakes. Not very frequent; cold springs at Barnby near Lowestoft; between Bungay and Halesworth, and St. Faith's Newton Bogs, near Norwich. Mr. Woodward. (Lower end of Lasswade Paper-mill. Mr. Neill. Roslin woods. Dr. Greville. Old Eden; Banks of Emont, and Keswick. Hutchinson. This singular and elegant plant flourishes many

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To the agriculturist these weeds are injurious, wide spreading, and difficult of extirpation. Under-draining will probably be found the most effectual practice. *Rhynchænus Equiseti* feeds upon the different species. E.)

* (This, like most of its congeners, is considered prejudicial to cattle. E.)

feet in height by the ruin of the ancient church at Walton, near Clevedon, Somersetshire. Anglesey. Welsh Bot. E.) P. May—June.*

E. LIMO'SUM. (Catkin terminal, elliptical: stem partially naked, smooth, as also the branches. E.)

Bolt. Fil. 38—(*E. Bot.* 929—*Fl. Dan.* 1184. E.)—*Ray.* 5. 2, *at p.* 160—*J. B.* iii. 729. 3.

Compared with *E. palustre:* Whole *plant* smoother. *Root* yellowish. *Stem* brown below, scored; not furrowed, (*E. palustre* is deeply so. E.) *Sheaths* close clasping the stem, the teeth of the lower brown, those of the upper black, and smaller than those of *E. palustre.* *Leaves* either straggling here and there, or in whorls on the middle part of the stem. *Head* dark brown, but not so dark as in *E. palustre*, also larger. For the above reasons I cannot think it a variety of that species. Woodw. (*Stems* erect, two feet high. A much smaller plant than *E fluviatile* of Linn. whose principal stems are whorled from top to bottom with numerous very long spreading branches, and produce no catkins. E. Bot. E.

(We are favoured with the following curious particulars, by James Norris, Esq. "In March, 1791, near Bromham, where a small stream had formed a deep channel, my attention was directed to the roots of an *Equisetum*, growing abundantly on the brink of both its perpendicular sides; which presented them laid bare to view. The roots were surrounded at their joints by a series of six, seven, or eight bulbs, arranged verticillately, sessile, and about the size of a nutmeg, but shaped like a fig, with a prominent umbilicus at the larger end. In the succeeding April I observed many of these bodies in a state of vegetation, some still attached to the parent root, others separate. The young plants were then about a finger's length, issuing from the umbilicus from whence also radical fibres were protruded downwards, and this accompanied with a proportionable loss of juice in the sustaining bulb. These were very different in strength, size, and appearance, from the recent shoots immediately proceeding out of the parent root. None of the bulbs were found within a foot or more of the horizontal surface of the earth." These bulbs differ much in dimensions from the size of peas to three quarters of an inch in diameter. If the full grown bulbs be detached and placed in a vessel of water, the process of vegetation may be conveniently attended to, for the young shoots, in a few days, will burst from the umbilical prominence, accompanied by their radical filaments. E.)

SMOOTH NAKED HORSE-TAIL. (*F. fluviatile.* Fl. Dan. Welsh: *Rhawn y march lled-dul-dail.* Common in the beds of rivers near the banks; also in shallow ponds, and ditches in marshes. P. May—June.†

E. HYEMA'LE. Stem naked, very rough, somewhat branched at the base: (sheaths whitish, black at the top and bottom: teeth deciduous: catkin terminal. E.)

(*Hook. Fl. Lond.* 161—*E. Bot.* 915. E.)—*Bolt. Fil.* 39—*Cam. Epit.* 770. *A.*—*Ger.* 955. 2—*Ger. Em.* 1113. 2—*Park.* 1021. 7. 8, *right hand fig.*

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* (According to Haller this kind was eaten by the Romans, an assertion hardly credible, unless referring merely to the young shoots. Linnæus states that oxen and rein deer are fond of it, but that horses refuse it. Doubtless, from the miserable necessities of northern sterility, our great naturalist has reported numerous plants as edible, which are scarcely calculated to sustain life. E.)

† (In Journ. Nat. 138, this plant is deemed a principal food of the water-rat, which is described, when feeding thereon, as making an audible "champing" noise. This noise we have frequently remarked beneath the surface of beds of weeds in large ponds, in situations unlikely to be haunted by rats; and have always attributed the sound to some, perhaps the like, process, (by suction,) of the finny race. E.)

Stem perennial, green, rough like a file. *Sheaths* of the joints pale, black at the base and edges, with imperfect teeth. Linn. *Stems* furrowed with eighteen or twenty rough angles, some of the joints three inches asunder. *Sheaths* with as many short blunt teeth as the stem has furrows. *Spike* terminal. Lightf. Differs from *E. limosum* in being sea-green, in the greater length of the joints, and in its extreme roughness. Woodw. (*Roots* black, creeping. E.)

Greater Rough Horse-tail. (Shave-Grass. E.) Dutch Rushes. Marshy and watery places, but not common. In a moist ditch near Middleton, Warwickshire, and in a rivulet near Broad-stich Abbey, Wiltshire; Scippon and Craven, Lancashire, and in Rigby Woods. Merret. Gamlingay Bogs, Cambridgeshire. Relhan. River side between Mavis Bank and Lasswade near Edinburgh. Sir J. E. Smith. Armingdale Wood near Norwich. Mr. Crowe. Just below Stone Bier Linn, near Lanark. Dr. Stokes. Sexton Wood, Hedendam, near Bungay. Mr. Stone. (Near Ripon, Yorkshire. Mr. W. Brunton. Darnaway Forest. Mr. Brodie: and in a copse by the town of Forres, Moray-shire. Fl. Lond. E.)
P. July—Aug.*

Var. 2. Stem with few leaves. Hal.

Trag. 692. 1—*Lon.* 1. 176. 1—*J. B.* iii. 729. 1—*C. B. Th.* 248.

Var. 3. With numerous lateral branches. St.

Matth. 1028—*Dod.* 73. 3—*Lob. Obs.* 461. 2. *Ic.* i. 794. 1—*C B.* 250.

When it has been browsed early in the spring, it puts forth numerous lateral branches. Griff.

(A plant which we have not seen, much resembling the last species, but smaller and more slender, stems seldom a foot high; sheaths black, with white, membranous, lanceolate, and more permanent teeth, and catkin blacker; *E. variegatum.* Sleich. Willd. Sm. Hook. E. Bot. 1987, has been found by Mr. G. Don on the sands of Barry; by the sea coast of Angus; and also at Baldogle, near Dublin, but by whom it does not appear.
P. July.—Nov. E.)

LYCOPO'DIUM.† *Capsules* axillary, kidney-shaped, two-valved, elastic; many-seeded.

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* The stems have long been imported from Holland to polish cabinet work, ivory, plaster casts, and even brass. Their cuticle is extremely rough and hard, beset with glass-like warts, which cause the epidermis to act like a file. (The silex is so abundant, that the vegetable matter may be destroyed, and the form retained, as was effected by Mr. Sivright. Under a high magnifying power, Dr. Brewster has detected a beautiful arrangement of the siliceous particles, of which some are grouped into oval forms, connected together like the jewels of a necklace, by a chain of particles forming a sort of curvilineal quadrangle; these rows of oval combinations being arranged in pairs. Many of these particles which form the straight lines do not exceed the five hundreth part of an inch in diameter. In the straw and chaff of wheat, barley, oats, and rye, he noticed analogous phenomena, but the particles were arranged in a different manner. The Doctor concludes that the chrystalline portions of silex, and other earths which are found in vegetable films, are not foreign substances of accidental occurrence, but are integral parts of the plant itself, and probably perform some important function in the processes of vegetable life. Grev. Edin. Sir H. Davy has also found this plant to contain a large portion of siliceous earth. It is hurtful to horses and cows, and disagreeable to sheep. The teeth of cattle feeding on it, as is sometimes the case in Iceland, are said soon to fall out. In Northumberland, the dairy-maids scour their milk pails with the stems of this plant. E.)

† (From λύκος, a wolf; and πυς, ποδιον, a foot, or feet; the plants of this genus exhibiting a fancied resemblance to a wolf's claw. E.)

L. CLAVA'TUM. Leaves scattered, terminating in threads: spikes cylindrical, on fruit-stalks, in pairs.

Dicks. H. S.—*E. Bot.* 224—*Dill.* 58. 1—*Fl. Dan.* 126—*H. Ox* xv. 5, *row* 1. 2—*Gesn.* i. *Tab. Pict. f.* 2—*Blackw.* 535—*Pluk.* 47. 8—*Trag.* 555—*Lon.* i. 179. 1—*Ger.* 1374. 11—*Matth. a. C. B.*—*Lob. Obs.* 645. 1, *Ic.* i. 244. 2—*Ger. Em.* 1562. 11—*Matth.* 63—*Park.* 1307. 4—*J. B.* iii. 766.

Stem creeping. *Leaves* open. Linn. *Shoots* from one to several feet in length, firmly attached to the earth by woody fibres. *Branches* expanding, distant, trailing; the lower ones again subdividing into forks. *Leaves* closely tiled, strap-spear-shaped, pointed, and hooked, with long white hairs at the end. In the summer, from the ends of the branches, the *fruit-stalks* rise up, almost leafless, jointed, straight, rigid, from two to four inches high, dividing at the top in two or three cylindrical, flowering spikes. *Spikes* closely tiled with scales or husks, egg-spear-shaped, pointed, hairy at the end, ragged at the edges. Each of these scales incloses a kidney-shaped yellow capsule, exploding when ripe a yellow powder, which resembles sulphur, and burns with an explosion. Weis. *Fruit-stalk* generally with two equal spikes, frequently with one, and sometimes with three, which are unequal. Gough.

COMMON CLUB-MOSS. WOLF'S-CLAW. Dry places on mountains, stony heaths, and in woods. P. July—Aug.*

L. SELAGINOI'DES. Leaves scattered, fringed, spear-shaped: spikes solitary, terminal, leafy.

Dill. 68, *Selaginoides*—*Fl. Dan.* 70—(*E. Bot.* 1148. E.)—*Scheuch. It.* 1. 6. 1, *at p.* 43—*Hall. Enum.* 3. 1, *at p.* 109, *and Hist.* 46. 1, *at* iii. *p.* 56—*H. Ox.* xv. 5, *row* 2. 11, *the lower part of the figure, the upper being L. inundatum. Pluk.* 47. 7.

Capsules, those at the base of the lower leaves when viewed sidewise apparently in threes, but really in fours, one pair above and the other pair below; at length opening, and disclosing as many large solid *seeds*; those at the base of the upper leaves yellower, of a looser texture, entirely simple, round: Linn., (and not understood. Smith suggests they may possibly be *gemmæ*, like those of viviparous flowers. E.) *Plant* from one to three inches high.

PRICKLY CLUB-MOSS. (Welsh: *Cnwp-fwsogl syth lleiaf.* Mountainous heaths and pastures. In Scotland, the north of England, and Wales. Mountains in Westmoreland. Mr. Woodward. Rocks above Fynnon frea, Lanberris. Mr. Griffith. (On Tywyn Trewan, and Tywyn, Aberffraw, Anglesey, abundantly. Welsh Bot. Pentland Hills. Mr Neill. Grev. Edin. In Ashness Gill, above Barrow Force, between Keswick and Borrowdale. Mr. Winch. Near Middleton, in Teesdale, Durham. E.) P. June—Sept.

L. INUNDA'TUM. Leaves scattered, very entire: spikes terminal, leafy.

Dicks. H. S.—*E. Bot.* 239—*Fl. Dan.* 336—*Dill.* 61. 7—*Vaill.* 16. 11—

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* In Sweden this plant is formed into door mats. It restores ropy wine in a few days. The seeds flash when thrown into a flame, and it is said are used in the theatres to imitate lightning. They are with difficulty made wet, and if scattered upon a bason of water the hand may be dipped to the bottom without wetting it. (The powder of the capsules, (seeds which have been proved to vegetate. Linn. Tr. ii. 313.) is used in Russia to heal chops and sores. The Poles apply a decoction of the plant, with a linen cloth, to the heads of persons affected with that very troublesome disease the *Plica polonica*, which is said to be cured by this fomentation. E.)

H. Ox. xv. 5, *row* 2. 11, *the middle and upper branches, the rest belonging to L. Selaginoides.*

Stem creeping. *Spikes* solitary, sessile, smooth, branched; the length of a finger or more, cylindrical. *Spikes* sessile, upright. *Leaves* awl-shaped, pointed, smooth, on the creeping shoots pointing one way, two lines long, and one broad at the base. Pol. *Shoots*, those bearing spikes an inch long, upright, cylindrical. *Leaves* strap-shaped, crowded, without terminal hairs. *Capsules* compressed, roundish, not kidney-shaped. Web.

Marsh Club-moss. Moist heaths and turfy bogs. Hounslow Heath, and near Esher. Near Norwich; Ellingham Fen, near Bungay, Suffolk. Mr. Woodward. On Norton Bog, Cannock Wood, Staffordshire. Hon. Mr. Bagot. Near the Bowder Stone, Keswick. Mr Winch. Shores of Coleshill Pool, Warwickshire. Bree, in Purt. E.) P. June—Sept.

L. sela'go. Leaves scattered; pointing eight ways: stem forked upright: branches all of the same height: flowers scattered.

E. Bot. 233—*Dill.* 56. 1—*Fl. Dan.* 104—*H. Ox.* xv. 5, *row* 2. 9—*Scheuch. It.* i. 6. 2.

Leaves obliquely disposed in eight rows, which may be best observed by holding the ends of the branches perpendicular to the eye. Linn. *Stems* upright, branched, from three to seven inches high, forked; branches again forked, closely covered with leaves. *Leaves* spear-shaped, sharp-pointed, stiff, smooth, shining, scolloped or serrated, and cartilaginous at the edge. *Capsules* in the bosom of the upper leaves, kidney-shaped, flatted, yellow, opening like an oyster, and pouring out a pale yellow powder. Weis. The whole *plant* very firm and stiff; from two to five inches high.

Fir Club-moss. (Welsh: *Cnwp-fwsogl syth mwyaf.* Gaelic: *Garbhag-an-t-sleibh.* E.) Mountainous heaths, in the clefts of rocks in Yorkshire, Lancashire, Westmoreland, Cumberland, the Highlands and Hebrides. Near the top of Ingleborough, Yorkshire. Curtis. On Dartmoor, Devon. (In Cae rhôs lligwy, Anglesey. Welsh Bot. Pentland Hills, on the rocks above Swanston wood. Dr. Greville. Needwood Forest, Staffordshire. E.) April—Oct.*

L. anno'tinum. Leaves scattered, pointing five ways; somewhat serrated: stem jointed at each year's shoot: spikes terminal, smooth, upright.

(*E. Bot.* 1727. E.)—*Dill.* 63. 9—*H. Ox.* xv. 5, *row* 1. 3—*Fl. Dan.* 127—*Pluk.* 205. 5.

Branches contracted at the last year's shoots, as in the female of *Polytrichum commune.* *Leaves* whorled, in fives, expanding, decurrent. Linn. *Root* branched. Trailing *stem* very long. Upright shoots from one to two inches and a half high, generally branched, supporting the spikes of fructification: (six to twelve inches high. E.)

(Interrupted Club-moss. E.) On the mountains of Carnarvonshire. Ray. About two hundred yards South West of Llyn y Cwn, Carnarvonshire. Mr. Griffith. (Summit of Cairn Gorum. Dr. Hooker. E.)
P. June—Sept.

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* Internally the effects of this plant are very violent; but it destroys worms. A decoction of it relieves swine and cattle of vermin. Linn. Its properties seem to challenge further inquiry. (If given in too large doses it occasions convulsions. In the Island of Raasy, near Sky, it is used instead of alum, to fix colours in dyeing. Encyc. Brit. E.)

L. ALPI'NUM. Leaves pointing four ways ; tiled, acute : stems upright, cloven : spikes sessile ; cylindrical.

E. Bot. 234—*Dill.* 58. 2—*Fl. Lapp.* 11. 6—*Fl. Dan.* 79—*J. B.* iii. 767. 1.

Stem creeping, from a span to a foot long. *Branches* alternate, at an inch distant from each other, upright, forked, of the length of a little finger. *Little branches* fasciculated, from twenty to thirty together, exactly four-cornered, the angles blunt. *Leaves* thickish. *Fruit-stalks* terminating a branch here and there, two or three lines high, forked, scarcely distinguishable from the branches, covered with smaller leaves, bearing as many spikes *Spikes* egg-shaped, nearly smooth Linn. All the branches divided, and frequently subdivided into forks. Dill. Upright *shoots* an inch and a half to three inches long ; thinner than the spikes which they support.

(SAVIN-LEAVED CLUB-MOSS E.) Mountainous heaths in Yorkshire, Cumberland, and the mountains of Wales, the Highlands and Hebrides. Near the top of Ingleborough, Yorkshire. Curtis Near the Holme, about five miles from Burnley, Lancashire. Mr. Woodward. On Yew barrow, in Furness Fells, with *L. Selago.* Mr. Jackson (Aghla and Barnesmore mountains, Donegal. Mr. Murphy. E.) P. July—Oct.*

PILULA'RIA.† *Calyx* common, woolly, globular, four-celled ; opening in four directions : *Anthers* many ; sessile : *Pistils* many : *Style* none.

P. GLOBULIF'ERA.

(*Hook. Fl. Lond.* 83—*E. Bot.* 521. E.)—*Dill.* 79—*Fl Dan.* 223—*Bull.* 375—*Bolt.* 10—*Pet.* 9. 8—*Vaill.* 15. 6—*Pluck.* 48. 1—*H. Ox.* xv. 7. 19.

Stem slender, trailing, striking root at the joints, and sending out delicate narrow or nearly cylindrical leaves, two or three inches long, generally three from a joint. *Fructifications* globular, like pepper-corns, on very short pedicles at the base of the leaves The curious fructification of this singular plant is beautifully illustrated in Fl. Lond. E.)

PILLWORT. PEPPER-GRASS. (Welsh : *Pelenllys gronynnawg* In boggy places, and grounds that have been overflowed, especially in a sandy soil. Near Streatham Wells, Petersfield Plukenet. On Hounslow Heath. Doody. Hainford and Stratton Heaths, Norfolk. Mr. Crowe. St. Faith's Newton Bogs. Mr. Pitchford. (Various bogs in Angus and Perthshires. Mr. Brown. Childwall Common, near Liverpool. Dr. Bostock. Between Corfe-Mullein and Poole, about the eleventh mile-stone ; and about Sandford Bridge, near Wareham. Pulteney At Prestwick Carr, Northumberland ; and near Wolsington Mr. Winch. In Anglesey. Welsh. Bot. Between Gorse Moor and Roche, Cornwall. Rev. J. Pike Jones. Braid Hill marshes, and Pentland Hills. Mr. Arnott. Loch of Clunie. Rev. Mr. M'Ritchie. Loch Lomond. Mr. Murray. Hook. Scot. Covering the shore of Coleshill Pool, Warwickshire, to a great extent. Mr. Purton, in Mid. Fl. E. P. June—Sept.‡

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* (A very handsome species ; said to be bitter, and to act as an emetic. E)

† (From *pilula*, a small ball or pill ; which the fructification of this plant remarkably resembles. E)

‡ (This interesting little aquatic is not to be detected without deliberate inspection ; being often found under water, and intermixed with plants whose leaves conceal or nearly resemble its own. E.)

ISOE'TES. Barr. Fl. *Anthers* sessile within the base of a leaf. Fert. Fl. *Capsule* two-celled, (one-celled : Hook., E.) within the base of a leaf.

I. LACUS'TRIS. Leaves awl-shaped, semi-cylindrical, bowed back.

(*Hook. Fl. Lond.* 131—*E. Bot.* 1084. E.)—*Bolt.* 41—*Fl. Dan.* 191—*Dill.* 80. 2—*Ray Ed.* i. 2, *at p.* 1.

Root fibrous ; fibres numerous, simple, slender, striking deep into the mud. *Leaves* growing in thick tufts, six or seven inches long, extremely like young rushes, convex on the back, flat, or slightly convex in front ; at the base swelling into a kind of bulb, covered by a thin tender skin, which bursts and discovers numerous minute whitish seeds, which, examined in the microscope, appear spherical, rough, somewhat transparent, and having three ribs meeting in a centre. Woodw. *Leaves* so brittle that they break on the least attempt to bend them. The transverse diaphragms very visible. I have often found the plant in seed in July. Griffith. (The *fronds* themselves are highly curious. A tranverse section represents four tubes ; a longitudinal one shows that these tubes are separated at regular distances by transverse bars or dissepiments, as in the tube of a *Conferva.* Hook. E.)

QUILL-WORT. At the bottom of cold alpine lakes. In Ffynnon frech, a small lake near the top of Snowdon Ray. Mr. Griffith. Near Llanberris; and Llyn Ogwen, on Snowdon; Loch Tay, and other Highland lakes. Lyn y Cwn near Snowdon. Pennant. Derwent-water, Cumberland. Mr. Woodward. (Ullswater, lower end ; and Gowbarrow-pike. Hutchinson. E.) Loch Lomond. Dr. Hope. (Loch of Clunie, Perthshire, abundant. Mr. Brown. Loch Leven. Mr. Arnott. Lakes in the Rosses, Donegal. E. Murphy, Esq. In White Meer, near Ellesmere. Mr. Griffith. E.) P. May—Sept.*

Var. 2. Huds. Dill. 80. 1.

Leaves not so stiff; from the base of which rises a stem throwing off shoots at different distances. Richardson, in R. Syn.

I apprehend that Richardson here has applied the word stem, to the shoot which connects the offspring to the mother plant.

I have found leaves of it in Llyn Ogwen, but could not procure an entire plant. Mr. Griffith. At the bottom of Derwent-water. Mr. Woodward.

Var. 3. Huds. Leaves very brittle, sometimes twice as long as those of var. 1, narrower and more pointed, transparent, with many minute pores, Richardson, in R. Syn. Grows with var. 1. ib. 307.

FILICES.

OPHIOGLOS'SUM.† *Capsules* numerous, nearly globular, without an elastic ring; united by a membrane into a two-rowed spike; opening crosswise when ripe: *Seeds* numerous, minute.

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* (Fish are said to feed, and grow fat, on these plants. The taller, more slender varieties, have been suspected to be occasioned by the frequent rising of mountain waters; but, as the shorter kind is observed to be intermixed, in the same situations, and in an equal state of maturity, this suggestion is scarcely satisfactory. E.)

† (From οφις, a serpent, and γλωσσα, a tongue; a name exceedingly appropriate to the appearance of the plant. E.)

O. VULGA'TUM. (Leaf egg-shaped, veinless, about as tall as the spike, which it bears. E.)

Dicks. H. S.—(*Hook. Fl. Lond.* 78. E.)—*E. Bot* 108—*Sheldr.* 28—*Fl. Dan.* 147—*Fuchs.* 577—*Lonic.* i. 103—*J. B.* iii. 708. 2—*Trag.* 323—*Kniph.* 6—*Cam. Epit.* 364—*Park.* 506—*Gars.* 425—*Tourn.* 325. 1—*Bolt.* 3—*Blackw.* 416. 1 *and* 2—*H. Ox.* xiv. 5, *row* 3. 1—*Barr.* 252. 1—*Matth.* 594—*Ger.* 327—*Dod.* 139. 1—*Lob. Obs.* 471. 1, *Ic.* i. 808. 2—*Ger. Em.* 404. 1—*Fructification, Hedw. Th.* 4. 20. 21. 22. 23.

Stem solitary. *Leaf* egg-spear-shaped, embracing the fruit-stalk. *Spike* strap-shaped, at first green, when ripe brown. Woodw. *Leaf* sometimes slightly lobed with small appendages on one or both sides, Bolt. (always solitary. (This perennial herbaceous plant increases in height, and its age may be exactly ascertained, by the successive additions of caudices. Mr. Lyell, in Fl. Lond. E.)

ADDER'S TONGUE. (Irish: *Luss na teangah.* Welsh: *Tafod y neidr cyffredin*) Moist cold meadows and pastures. Meadows and sides of rivulets in the north of Yorkshire Curtis. Love Lane, near Derby. Mr. Whately. Near Blymhill, Staffordshire. Rev. S. Dickenson. Beddington, near Bungay. Mr. Stone. Near Meltingham Castle, Suffolk, frequent. Mr. Woodward. Broadmoor, near Birmingham. (About Liverpool. Dr. Bostock. In Anglesey. Welsh Bot. E.)
P. May—June.*

Var. 2. *Many-spiked.* Fruit-stalk divided at the top, each branch supporting a spike; Bolt., and the spike itself sometimes divaricating.

Blackw. 416. 3—*Bolt.* 1. 1—*Lob. Ic.* i. 809. 1—*Ger. Em.* 404. 2—*H. Ox.* xiv. 5, *row* 3, *f.* 2—*H. Ox. Ib. f.* 3. 4. 5. 6—*Cam. Epit.* 364—*Park.* 506. *the lesser figures.*

OSMUN'DA.† *Spike* branched: *Capsules* distinct, sessile, globular, two-valved: without an elastic ring; opening either vertically or horizontally.

(1) *Fruit-stalks distinct, rising from the stem at the base of the leaf.*

O. LUNA'RIA. Stalk solitary: bunch lateral: leaf winged, solitary.

Dicks. H. S.—(*Hook. Fl. Lond.* 66. E.)—*Kniph.* 11—*E. Bot.* 318—*Blackw.* 420—*Fl. Dan.* 18. 1—*Garid.* 78, *at p.* 346—*Col. Phyt.* 18—*Cam. Epit.* 643. 1—*Bolt. Fil.* 4—*Barr.* 252. 3—*H. Ox.* xiv. 5. 1—*Lon.* i. 77. 1—*Matth.* 903—*Ger.* 328. 2—*Matth. a. C. B.* 647. 1—*Clus.* ii. 118. 2—*Dod.* 139. 2—*Lob. Obs.* 470. 3, *Ic.* 1. 807. 2—*Ger. Em.* 405. 2—*Park.* 507—*Fuchs.* 483—*J. B.* iii. 710—*Trag.* 914.

Within the base of the stem, early in the spring, may be found a complete rudiment of the next year's plant. Linn. *Wings* of the leaf fleshy, crescent-shaped, (whence its trivial name in both languages, E.) semi-circular, and halberd-shaped. Woodw. About five inches high. *Leafits* irregularly scolloped. *Spikes*, or rather panicle, from one to two inches long.

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* (An ointment prepared from the fresh leaves has been recommended as a vulnerary to green wounds by Matthiolus, Tragus, and others, and is sometimes used as such in this country. E.)

† (Possibly derived from the Anglo-Saxon word *mund*, signifying strength, (and hence Osmond, an appellation of the Celtic deity Thor), in allusion to the supposed invigorating virtues of these plants. Fl. Lond. E.)

Moonwort. (Irish: *Luss na Misia.* Welsh: *Lloer-redynen gyffredin. O. Lunaria.* Linn. Huds. Lightf. Fl. Brit. E Bot. *Botrychium Lunaria.* Willd. Decand. Hook. E.) Mountainous meadows and pastures in Westmoreland; near Settle, Yorkshire; Scadbury Park, Kent; and Chisselhurst Common. Mear Bank, by Sykes Wood, Ingleton, Yorkshire. Curtis. North side of Bredon Hill, Worcestershire. Nash. Near Bury. Mr. Woodward. Stratton Heath, Norfolk. Mr. Crowe. On coal-pit banks near Stourbridge. Mr. Waldron Hill. (Bootle, near Liverpool. Dr. Bostock. Sea coast between South Shields and Sunderland. Winch Guide. In an old pasture on Oversley Hill, near Alcester. Rufford, in Purt. Near Alaw and Aberffraw rivers, Anglesey. Welsh Bot. E.)
P. May—July.

Var. 2. Linn. Leaves and stalks several. Cam.

Cam. Epit. 644—*Matth. a. C. B.* 647. 2.

Found in England. Cam. *ib.*

Leaves in pairs, doubly winged, wings cut. Wild. n. 875.

Var. 3. Leaves cloven into segments.

Breyn. Cent. 93—*H. Ox.* xiv. 5, *row* 2. 3—*Fl. Dan.* 18. 3.

Osmunda Lunaria β. Huds. Bolt. p. 5.

Westmoreland, and the northern counties. R. Syn.

Mr. Bolton found a variety on a high knoll in the grounds of Shibden Hall, near Halifax, with leaves shaped like an expanded fan, divided by narrow sections running almost down to the base into four or five lobes, which are deeply crenated at their extremities. E.)

(2) *The leaf itself bearing the fructification.*

O. **REGA'LIS.** Leaf doubly winged: bunches terminal, more than doubly compound.

Knigh. 2—(*Hook. Fl. Lond.* 150. E)—*E. Bot.* 209—*Pluk.* 181. 4—*Trag.* 513—*Blackw.* 324—*Tourn.* 324—*Fl. Dan.* 217—*Bolt.* 5—*J. B.* iii. 736—*Dod.* 463—*Lob. Obs.* 474. 1 *and* 2; *Ic.* i. 813—*Ger. Em.* 1131—*Park.* 1038—*Ger.* 971—*H. Ox.* xiv. 1, *row* 3. 1—*Gars.* 273—*R. Syn. Ed.* i. 1. 2, *at p.* 1.

Capsules opening vertically. Stackh. From two to four feet high, of a pleasant transparent green. *Leaves* doubly winged. *Leafits* strap-spear-shaped, blunt, finely but indistinctly serrated, the lower and younger ones often lobed at the base. The upper wings change into clusters of capsules, and lose all appearance of foliage. *Fructification*, when ripe, red brown.

Osmund Royal. Flowering Fern. Royal Moonwort. (Scotch: Royal Brachens. Welsh: *Rhedynen cyfrdwy.* E.) Watery places and boggy marshes. About Cosgarne and Marazion, in the mouths of old mines. Mr. Watt. Bogs near Yarmouth. Mr. Woodward. St. Faith's, Newton Bogs, near Norwich. Mr. Crowe. (Low-gelt-bridge, and Keswick. Hutchinson. Allonby Moss, Cumberland. Rev. J. Dodd. Chartley Moss, Staffordshire. Hon. Mr. Bagot. Between Crosby and Formby, near Liverpool.' Dr. Bostock. In Moreton Moors, three miles from Blymhill, Shropshire. Rev. S. Dickenson. Near Wareham, by Sandford Bridge; near New Bridge, between Wimborne and Ringwood. Pulteney. By Llyn Traffwll, in the turbary at Trewilmot, Holyhead. Welsh Bot. By Loch Tay, Loch Fyne, and Derwentwater Lake. Mr. Winch. Bog near Coleshill pool. Bree, in Purt. Near Parker's mill, between Stonebridge and Bradnock's Marsh, Warwickshire. Smith, in Perry. Leith Hill Common, Surry; and covering half an acre, near Danbury, Essex. Mr. W. Christy. Goonhilly Downs, Cornwall. Rev. J. Pike Jones. About the cliffs near Dawlish, and other parts of Devon. Abounds on the rocks and in the woods near the Falls of Clyde, Lanarkshire. Moist hedges, New Forest, Hants. This plant, though before not to be found for many miles around Birmingham, in the year 1802, appeared on an archery butt on Moseley Common, artificially raised with mud from a deep pit, in which the seeds had probably lain for a length of time. It continued to flourish so long as the butt was permitted to remain, but has probably now again disappeared. By such accidental circumstances may we often account for many apparent errors in the stations of plants. See also *Datura Stramonium*. vol. ii. p. 315. E.) July—Aug.*

PTE'RIS.† *Capsules* disposed in a line under the reflexed edge of the leaf.

P. CRIS'PA. Leaves more than doubly compound: leafits alternate, roundish, cut.

Bolt. 7—(*E. Bot.* 1160. E.)—*Fl. Dan.* 496—*H. Ox.* xiv. 4. 4 *and* 27—*Pluk.* 3. 2 *and* 3—*J. B.* iii. 743—*H. Ox.* xiv. 5. 25.

Leaf-stalks waved, green. *Fructifications* in lines along the under margin of the leafits, which is rolled back upon them, as in *P. aqualina*; after the discharge of the seeds increasing in breadth so as to cover the whole disk, except the mid-rib. Bolt *Leaf-stalks* from two to seven inches long. *Leaf* from one inch and a half to three inches long. *Leafits* of the barren leaves wedge-shaped and snipt at the edge; those of the fertile leaves much narrower, strap or strap-spear-shaped, and entire. *Capsules* surrounded with an elastic ring; of which *Osmunda* and *Ophioglossum* are destitute.

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* (This "flower-crowned Prince of English Ferns" is available for rock-work, especially if removed with a portion of bog earth; and can scarcely fail to appear ornamental in any suitable situation. The preservation of the vital principle in seeds, (which in some species would appear to increase with continued preservation, as in those of melon,) is one of those natural phenomena which are little regarded, because familiar to the most casual observer. But that some should lose their vegetative power by being kept out of the ground even for a short time after ripening, while others may be sent round the world, and exposed to every vicissitude of climate, or even be buried for ages in the earth, and yet vegetate with the first favourable opportunity, is truly surprising, and the cause past man's finding out. E.)

Impressions of the leaves are frequent in the nodules of iron stone found in Coalbrook Dale, Salop. It is the only species of an indigenous vegetable which I have ever discovered in a fossil state. But it is a native of Virginia also. St. All the other impressions of *Filices*, which I have seen on iron stone seem to be those of American plants. The root boiled in water becomes mucilaginous, and is used in the north of Europe to stiffen linen instead of starch.

† (The πτερις of the ancient Greeks appears to have been some kind of Fern, so denominated on account of its wing-like figures; but further we know not. E.)

CRISPED or CURLED FERN. PARSLEY FERN. STONE BRAKES. (*P. crispa.* With. Sm. Hull. Hook. and Linn. MS. fid. Sm. *Osmunda crispa.* Linn. Sp. Pl. Huds. Lightf. Bolt. Rocks, heaths, old walls, in the northern counties frequent. Rutland. Mr. Jackson. Shap, very common; also Tenterfell, near Kendal. Mr. Gough. Cader Idris: fructifications ripe in September. Mr. Griffith. (Styehead, Wastdale; Borrowdale, Teesdale; Highlands of Scotland, frequent. Mr. Winch. E.)

Var. 2. Leaves curled.

Mr. Jackson has observed two varieties with curled leaves, the one curled like Parsley, the other like the flowering part of *Osmunda regalis.*

(P. July. E.)

P. AQUILI'NA. Leaves more than doubly compound: leafits winged: wings spear-shaped; the lowermost wing-cleft; the upper ones smaller.

(*E. Bot.* 1679. E.)—*Ger.* 969. 2—*Bull.* 207—*Bolt.* 10—*Pluk.* 182. 1—*Blackw.* 325—*Fuchs.* 596, *misprinted* 569—*Dod.* 462. 2—*Trag.* 512—*Matth.* 1291—*Gars.* 272—*Lob. Obs.* 173. 2—*Ic.* i. 812. 2—*Ger. Em.* 1128. 2—*Park.* 1037, *misprinted* 1039—*H. Ox.* xiv. 4. 3—*Cam. Epit.* 992.

The *root* cut obliquely presents a kind of representation of the Imperial Eagle. Linn. Whence Linnæus has named it *P. aquilina,* or Eagle Brakes.*

FEMALE FERN. COMMON BRAKES. (Scotch: *Brackens,* or *Brechan.* Welsh: *Adain-redynen eriedd.* Gaelic: *Raineach.* E.) Heaths and woods. P. Aug.†

BLECH'NUM. *Capsules* forming two parallel lines near the rib of the leaf.

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* (Thomas Smith, Esq. of the Temple, London, has observed an inner or real *involucre,* besides the one formed by the convolute margin of the frond, to which it is opposite, and, curling inward, covers the young capsules, and is only to be observed when the plant is in fructification; the whole being protected by the outer one, or margin of the frond. Hook. Scot. A similar membrane to this inner involucre has been detected in some few other species usually included in the present genus; hence it has been suggested that this difference might afford a character which would justify a new genus. The principle, perhaps, abstractedly, it were difficult to deny, but not less so, practically, the inconvenience of establishing a primary distiction on parts absolutely imperceptible to the naked eye. Dr. Greville informs us that the ferruginous filaments which are produced by the root of this plant, and some of its congeners, have been described by Agardh and other authors, as a *Conferva!* E.)

† A tolerably pure alkali may be obtained from this plant. In many parts of England the ashes, mixed with water, are formed into balls; which are afterwards heated in the fire, and used to make lye for scouring linen. It makes a very durable thatch; and is an excellent litter for horses and cows. Where coal is scarce, it is used to heat ovens and to burn limestone; for it yields a very violent heat. In the more inhospitable climates, bread is prepared from the roots. The Fern-moth feeds upon it. (In Japan the very young shoots of the leaves are often sold in bunches as edible.) The woody root is bruised, and the water being expressed in which it had been steeped, the pulp is eaten by the poorest people. Kempfer. Fern is so astringent as, in many places abroad, to be employed for dressing kid and chamois leather. The powder of it is given by country people to remove worms. Its medicinal qualities appear to be much like those of *Polypodium Filix-mas.* This elegant plant is not unknown in Scottish pastorals, and had more charms for the patriotic bard of Ayr than the boasted products of foreign lands:

"Far dearer to me yon lone glen o' green *Breckan,*
Wi' the burn stealing under the lang yellow broom." E.)

B. **spi'cant.** Barren leaves wing-cleft: fruitful leaves winged, narrower: segments very entire.

(*E. Bot.* 1159. E.)—*Hedw. Theor.* 5, *the fertile and barren leaf, with the parts of fruct. dissect. and magnified*—*Curt.* 127—*Fl. Dan.* 99—*Trag.* 550—*Lon.* i. 225. 1—*Clus.* ii. 213. 1—*Dod.* 469. 1—*Lob. Obs.* 475. 2; *Ic.* i. 815. 2—*Ger. Em* 1140. 2—*Park.* 1042. 2—*H. Ox.* xiv. 2. 23—*Ger.* 978. 2—*Bolt.* 6—*J. B.* iii. 715. 2—*Cam Epit.* 665—*Gis.* 49.

Flowering-leaves much narrower than the barren ones. Linn. *Fructifications* covered at first with a thin membrane. *Capsule* of one cell and two valves, connected by an annular elastic cord, containing many minute seeds. Hedw. *Barren leaves*, segments widest at the base, strap-spear-shaped, the lateral ribs forked, sometimes, though rarely, terminating in minute scollops. *Fertile leaves*, segments not half so broad, separate, though the confluence may almost almost always be traced, and towards the end of the leaf gives a waved appearence to the mid-rib. Woodw. *Fertile leaves*, twelve to eighteen inches high, and near two inches broad, the lower part naked or with short imperfect leafits. *Barren leaves* from the same root, but only about half as tall, clothed with leafits nearly to the bottom. From the narrowness of the leafits it is not easy to determine whether the rows of capsules may more properly be considered as contiguous and parallel to the mid-rib, which is the character of *Blechnum*, or disposed along the edge of the leaf which would refer it to *Pteris*. It appears, however, from Hedwig's microscopical dissections, that the anthers are found upon the mid-rib, and that circumstance is, I think, sufficient to determine that the rows of capsules more properly belong to that than to the edge of the leaf, notwithstanding Hedwig himself has referred it to the genus *Acrostichum*. See Pl. XIII. fig. 9, 10, 11.

Rough Spleenwort. (Welsh: *Rhedyn Gwrh.* *Osmunda spicant.* Linn. *Acrostichum spicant.* With. Ed. ii (*Blechnum boreale.* Sw. Willd. Sm. Hook. E.) Groves and moist heaths. St. Faith's Newton woods, near Norwich; common in Herts, and frequent in the North. Mr. Woodward. At Hamsford, Norfolk. Mr. Crowe. In lanes about Aston Park, near Birmingham. (At the bottom of the thicket in the Vale of Dudcombe, near Painswick. Mr. Oade Roberts. Abundant on Hampstead Heath, Middlesex. Gerard. In lanes about Bromsgrove Lickey, Worcestershire. Mr. Purton. Trossacks; Loch Katrine. Dr. Bostock. In Anglesey. Welsh Bot. E.) P. July—Sept.

ASPLE'NIUM.* *Capsules* disposed in straight and nearly parallel lines on the under surface of the leaf.

(1) *Leaf simple.*

A. **Scolopen'drium.** Leaves heart-tongue-shaped, very entire: stalks hairy.

Curt.—(*E Bot.* 1150. E.)—*Tourn.* 319—*Blackw.* 138—*Bull.* 167—*Bolt.* 11—*Gars.* 346—*Trag.* 519—*Fuchs.* 294—*J. B.* iii. 756—*Clus.* ii. 213. 2—*Dod.* 467. 1—*Cam. Epit.* 579—*Walc.*—*Lob. Obs.* 468. 3—*Ger. Em.* 1138. 1—*Park.* 1046. 1, *f.* 2—*H. Ox.* xiv. 1. 1—*Lon.* i. 224. 3—*Matth.* 831.

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* (From σπλὴν, *splenium*, belonging to the spleen; from its once supposed efficacy in curing disorders of that viscus. E.)

Leaf-stalks rising from the root, about two inches long. *Leaf* strap-shaped but rounded and hollowed at the base, from eight to twelve inches long, or more ; one inch and a half to two inches and a half broad, the shortest leaves the broadest. *Fructifications* in lines, slanting upwards from the mid-rib, but not in contact with it.

COMMON SPLEENWORT, OR HART'S-TONGUE. (*Scolopendrium vulgare.* Sym. Sm. Hook. (Welsh: *Tafod yr hŷdd cyffredin.* Moist shady rocks, mouths of wells, and old walls. P. Aug.—Sept.*

Var. 2. Leaves curled and jagged at the edge.

J. B. iii. 757. 3.

Near a petrifying spring, by the side of a rivulet at the bottom of Garn dingle, three miles from Denbigh. Mr. Griffith.

Var. 3. Leaves with many clefts at the end.

Clus. ii. 213. 3—*Dod.* 467. 2—*Lob. Obs.* 469. 1 ; *Ic.* ii. 805. 2—*Ger. Em.* 1138. 2—*Park.* 1047. 1—*J. B.* iii. 757. 2—*H. Ox.* xiv. 1, *row* 1. 2—*Ger.* 976. 2.

Phyllitis multifida. R. Syn. 117. In a lane near Swaneling, not many miles from Southampton. Gerard Em. Near Bromham, growing in the mouth of a well very much shaded. Mr. Norris. Cawsey Wood, Durham. Mr. Winch. E.)

Var. 4. Leaves with clefts at the edges.

Tourn. 451.

Phyllitis polyschides, &c. R. Syn. 117. In woods. Bobart in R. Syn. 117.

Var. 5. Stalk branched, with three or more leaves.

H. Ox. xiv. 8.

Mr. Gough sent me a specimen of this variety in which the stalk divides into five branches, but is entire at the base for about two inches and a half, and furnished with its usual leafy border.

This was gathered on Warton Cragg, near Lancaster.

All the above varieties are much smaller than the plant in its more common state.

(Var. 6. Leaves much plaited and crenate at each edge, spear-shaped, (sometimes heart-tongue-shaped,) nearly as large as the common variety.

Found in woods at Stouts-hill, Gloucestershire, by the Rev. Mr. Baker. E.)

(2) *Leaf wing-cleft.*

A. CE'TERACH. Leaves wing-cleft : lobes alternate, confluent, blunt.

Bull. 383—(*E. Bot.* 1244. E.)—*Walc.*—*Gars.* 212—*Barr.* 1051. 1052. 1043. 1044—*Tourn.* 318—*Trag.* 551—*Dod.* 468—*Lob.* 470. 1 ; *Ic.* i. 807. 1—*Ger. Em.* 1140. 1—*Park.* 1046, *f.* 1—*Ger.* 978. 1—*Matth. a. C. B.* 646. 1—*H. Ox.* xiv. 2, *row* 3, *f.* 4—*Blackw.* 216—*J. B.* iii. 749—*Bolt.* 12—*Matth.* 899—*Cam. Epit.* 640.

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* (When bruised, the whole plant emits a nauseous scent. To the taste it is mucilaginous and acrid; and though not possessed of the powers ascribed to it by the older writers, not only for relieving the spleen and liver, but "all other griefes proceeding of oppilations or stoppings whatsoever;" perhaps Ray's recommendation of it, from his own experience, as a good medicine in convulsive disorders, may deserve attention. E.)

Leaves so covered underneath with scales as to conceal the fructifications. Linn. *Leaves* many from a root, three to six inches long, the hollows between the lobes of the same size and shape as the lobes, edges somewhat bent back when the fructifications ripen. Woodw.

SCALY SPLEENWORT. (Welsh: *Rhedyn y gogofau; Dueg-redynen feddygawl. Scolopendrium Ceterach.* Sym. Sm. Roth. E.) Old walls and clefts of moist rocks. About Bristol plentiful. At Bury, at Asheridge, Hertfordshire. Northern counties frequent. Mr. Woodward. Heydon, Norfolk. Mr. Bryant. On old walls cemented with mortar mixed with clay; and in a similar soil in limestone fissures on the highest part of Kendal Fell. Mr Gough. (Garden wall at Tocknels, near Painswick. Mr. Oade Roberts. Hill of Kinnoul, Scotland. Mr. Winch. At Badsey, Worcestershire; Rufford; Walcot, in Haslar parish, Warwickshire; in Dovedale; Bree in Purt. Walls of an old castle near the village of Llanfihangel y Pennant, Merionethshire. Mr. Griffith. In caves in Holyhead mountain. Welsh Bot. E.) P. May—Oct.*

(3) *Leaves winged.*

A. TRICHO'MANES. Leafits nearly circular, scolloped.

Dicks. H. S.—(*Hook. Fl. Lond.* 156—*E. Bot.* 576. E.)—*Woodv.* 204—*Kniph.* 6—*Walc.*—*Bolt.* 13 *and* 2. 2—*Bull.* 185—*Tourn.* 315. A.D.E.—*Fl. Dan.* 119—*Blackw.* 370—*Gars.* 128. B.—*Trag* 530. 1—*Lonic.* i. 212. 1—*Cam. Epit.* 925—*Park.* 1051—*Matth.* 1202—*Dod.* 471. 1—*Lob. Obs.* 471. 2; *Ic.* i. 809. 2—*Ger. Em.* 1046—*H. Ox.* xiv, *row* 1. 10—*Fuchs.* 796—*Ger.* 985—*Hedw. Th.* 7. 37, *a leafit magnified.*

Plant from three to seven inches high, consisting of a leaf, several of which rise singly from a black fibrous root; from one quarter to three quarters of an inch broad. *Leafits* either circular or oblong; sometimes rather cut into lobes; capsules when ripe covering the whole under surface. (Its *fructification* is most abundant during summer, but may be found the whole year. It much resembles *A. viride*, but, besides the different colour, the latter has the *pinnæ* rather ovate than oblong, serrated and cuneate at the base—nearly rhomboid. Fl. Lond. E.)

COMMON MAIDENHAIR. (Welsh: *Dueg-redynen Gwallt y forwyn.* E.) Old walls, rocks, and shady stony places. P. May—Oct.†

A. VIR'IDE. Leaves spear-shaped: leafits circular, but with three or four angles.

Dicks. H. S.—(*E. Bot.* 2257—*Fl. Dan.* 1289. E.)—*Bolt.* 14.

Leaf-stalks pale green, sometimes brownish towards the root, and in some specimens brown and glossy as in *A. Trichomanes. Wings* rhomboidal, fixed on the leaf-stalk by one of the corners, the upper and lower sides of the base very entire, the other two scolloped. Bolt. *Wings* more lopped at the base than in *A. Trichomanes. Leaf-stalk* green, which seems to be the only certain character by which it is distinguishable from that species. Wood. In *A. Trichomanes* the wings or leafits are less regular in their edges, and less distinctly scolloped; but in *A. viride* the inner and under edges are always entire, the upper and outer ones always scolloped. The general shape of the *leaf* in both species is the same, and rather strap than spear-shaped.

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* (The Rev Hugh Davies informs us that the Scaly Spleenwort is becoming very scarce, from being gathered for bait in rock-cod fishing. E.)

† (This Fern has no pretensions to medicinal virtues, but is generally substituted instead of the more rare True Maidenhair for making capillaire, a syrup which, when perfumed with orange flowers, is considered an agreeable beverage. The Common Maidenhair is less sensible to cold than the other kind, and with several of its tribe may be introduced to advantage upon ornamental rock-work. E.)

GREEN-RIBBED SPLEENWORT. (*A. viride*. Huds. Willd. Ehrh. Bolt. Dicks. Sm. Hook. E.) *A. Trichomanes* γ. Linn. Moist rocks on mountains. On an old wall at Black Bank, near Leeds. Mr. Wood. On Ingleborough, near the summit. Bolton. In Borrowdale. Mr. Woodward. Crib y Ddescil and Clogwyn du yr Arddu. Mr. Griffith. (Frequent in the Highlands of Scotland. Mr. Brown. Between Widdy Bank and Caldron Snout, Durham. Ashness Gill, near Keswick, and Ben Lawers. Mr. Winch. At the Cil-hepste water-fall, near Pont-ned-vechan; and on Brin-cous, near Neath, Glamorganshire. Mr. Dillwyn. E.)
P. June—Sept.

Var. 2. Wings lobed and cut.

H. Ox. xiv. 13. 3—*Pluk.* 73. 6—*Tourn.* 315. C. F.—*Ger.* 975.

Scotland. Bobart, in H. Ox.

Var. 3. Leaf branched. Bolt.

Bolt. 2. 3—*H. Ox.* xiv. 3. 11—*Ger.* 985. 2—*J. B.* iii. 755. 1.

A. Trichomanes ramosum. Linn. *A. Trichomanes* β. Huds. On all the high rocks of Carnarvonshire. On a stone wall in a garden at Maidstone, Kent, and on limestone rocks Craven, Yorkshire. On the rocks below Ogden Kirk, on the opposite side of the Clough. Bolt.

A. MARI'NUM. Leafits egg-shaped, serrated: the upper edges expanded at the base, the lower hollowed out.

(*Hook. Fl. Lond.* 60—*E. Bot.* 392. E.)—*Pet. Gaz.* 91. 1—*Bolt.* 15—*H. Ox.* xiv. 3. 25—*Pluk.* 253. 5—*Walc.*—*Lob. Obs.* 274. 3, *Ic.* i. 814—*Ger. Em.* 1143. 4—*Park.* 1045. 7.

Stalks reddish brown. *Leafits* in some specimens spear-shaped, acutely scolloped, the scollops equal in number to the lines of fructification, lobed at the base on the upper side. Woodw. *Plant* five inches high. *Stalk* crooked at the base.

(SEA SPLEENWORT. Welsh: *Duegredyn'n arfor.* E.) On rocks generally on the sea shore, about Priestholm Island, near Beaumaris, at Llandwyn in Anglesey; about the Castle of Hastings, Sussex, and in Devonshire, Cornwall, and Cumberland. In a stone quarry close to the road from Warrington to Winwick, Lancashire. Bolton. (On the coast of Angus between Montrose and Arbroath. Mr. Brown. At Bootle, and in fissures of rocks at Knot's Hole, near Liverpool. Dr. Bostock. On rocks by the coast near Whitburn, and Seaton, Durham. Winch Guide. Between Zennar and Mawgan, Cornwall. Rev. J. Pike Jones. E.)
P. June—Sept.

Var. 2. Leafits deeply cut. Bolt.

Sibbald Scot. Ill. t. 3, *f.* 1. 2—*Bolt.* 2. 4.

Plants corresponding to Sibbald's figures we found in the Coves at Weemys in Scotland. Lightfoot. *Adiantum trapeziforme.* Hudson.

(A. SEPTENTRIONA'LE. Frond wing three-cleft: segments alternate, linear, jagged at the tops.

Hook. Fl. Lond. 162—*E. Bot.* 1017—*Fl. Dan.* 60—*Lob. Adv.* 17. 2, *Ic.* 1. 47. 1—*Ger. Em.* 1561. 8—*Bolt. fil.* 8—*Trag.* 537—*Lon.* 1. 224. 5—*Ger.* 343. 4—*Park.* 1045. 8—*J. B.* iii. 755. 2.

From two to five inches high. *Leaves* mostly in pairs; strap-spear-shaped, on long leaf-stalks rising from the root. With. Readily distinguished by its bi or rarely tri-fid, (by no means pinnatifid,) linear fronds; as well as by the crowded fructifications, which, in an old state, have so much the appearance of those of an *Acrostichum*, that the plant was by the older Botanists invariably arranged under that genus. Its nearest affinity is *Asplenium Ruta-muraria.* Hook. Fl. Lond. E.)

(Forked Spleenwort. *A. septentrionale.* Hull. Sm. Willd. Hoffm. Sw. De Cand. *Acrostichum septentrionale.* Linn. Huds. Lightf. With. to Ed. vii. Dicks. Bolt. Clefts of rocks and old walls, chiefly in the northern division of this Island; and tops of mountains, as Carnedd Lewelyn, in Wales; on Ingleborough, Yorkshire; at Patterdale and Keswick, and above Ambleside, Westmoreland. Rocks in Edinburgh Park. Dr. Hope. The rock of Stenton, near Dunkeld. Mr. Arnott, in Fl. Lond. Rocks on the southern side of Blackford Hill, Somersetshire. Mr. Brown. P. E.)

A. alterníifo'lium. Leafits wedge-shaped, alternate, notched at the extremity.

(*E. Bot.* 2258. E.)—*Jacq. Misc.* 5. 2—*Breyn. Cent.* 97.

From three to five inches high. (An intermediate species between *A. septentrionale* and *Ruta-muraria,* though perfectly distinct from both. Sm. E.)

Alternate-leaved Spleenwort. (*A. alternifolium.* Wulf. Dicks. Sm. Hook. *A. germanicum.* Weis. Willd. Hoffm. Ehrh. E.) First found in Britain by Mr. Dickson, on rocks in the South of Scotland. Linn. Tr. ii. p. 290. P.

(4) *Leaves doubly compound; divisions alternate.*

A. Ru'ta-mura'ria. Leafits wedge-shaped, finely scolloped.

Kniph. 6—*E. Bot.* 150—*Sheldr.* 68—*Bull.* 195—*Walc.*—*Cam. Epit.* 785—*Fl. Dan.* 190—*Tourn.* 317. 1—*Bolt.* 16—*Blackw.* 219—*Gars.* 128. *a.*—*Fuchs.* 730—*J. B.* iii. 753—*Lon.* i. 221. 1 *and* 2—*Trag.* 530. 2—*Dod.* 470—*Lob. Obs.* 472 1; *Ic.* i. 811. 1—*Ger. Em.* 1114. 3—*Park.* 1050. 4—*H. Ox.* xiv. 5. 22—*Ger.* 983—*Matth.* 1041.

(*Fronds* three or four inches high, resembling Rue leaves. E.) *Stem* bare for near half its length. *Fructifications* in two or three rows, on each the rib of the leaf. Bolt. The *foliage* at first sight has something of a Trefoil appearance. Smith very properly observes, that the Ferns can only be determined in their early state before the bursting of the membrane which covers the capsules, for in an advanced state the back of the leaf is covered with a confused mass of capsules, with hardly a vestige of their former disposition. He thinks this species may be best distinguished by the *membrane* always bursting towards an adjoining vein or nerve, never towards the edge of the leaf, unless when a vein is found on that side. See E. Bot. p. 150.

White Maidenhair. Wall Rue. Tentwort. (Welsh: *Dueg-redynen y muriau.* Old walls and moist crevices of rocks. Southwold Church, Suffolk, Long Stratton Church, Norfolk. Mr. Woadward. Walls at Shirehampton, near Bristol; and about Bewdley. (In Anglesey;

varying much in form and size. Welsh Bot. Church porch at Great Alne; Walcot, and Wixford, Warwickshire: Badsey, Worcestershire. Purton. Tor Abbey, Devon. Rev. J. P. Jones. Rocks at Castle Eden Dean, and Boldon Hill, Durham; on the Roman Wall, Shewing Shields, Northumberland. Winch Guide. Garden walls at Tocknels, near Painswick. Mr. Oade Roberts. This species with *A. Ceterach, Trichomanes, Adiantum nigrum,* and *Scolopendrium, Polypodium vulgare,* &c. abound on old walls at, and in the neighbourhood of, the Rookery, Brislington, near Bristol. E.) P. June—Oct.

A. ADIAN'TUM-NI'GRUM. Leaves almost triply winged: wings alternate: leafits spear-shaped, cut-serrated.

Kniph. 7—(*E. Bot.* 1950. E.)—*Fl. Dan.* 250—*Gars.* 126—*Blackw.* 220—*Bolt.* 17. 1 *and* 3—*Dod.* 466—*Ger. Em.* 1137—*Ger.* 975. 1—*H. Ox.* xiv. 4. 16—*Lob. Ic.* i. 810. 2—*Park.* 1049. 2.

(Much larger than the foregoing. *Fronds* about a foot high. E.) *Seeds* saffron-coloured. Linn. *Lobes,* the extreme serratures so acute as almost to appear fringed. Woodw. *Stalks* black or deep red brown, glossy. *Fructifications* three to seven on each segment.

BLACK MAIDENHAIR. OAK FERN. (From the Greek compound *δρυοπτερίς,* applied by some old authors to this plant. Welsh: *Dueg-redynen ddu.* Shady places and old walls. P. April—Oct.*

Var. 2. Wings long, divided into very fine and longish segments. Sherard, in R. Syn. Pluk. 282. 3. Wings with hair-like segments. Pluk. Fructifications none discovered. Possibly a variety of *A. Adiantum-nigrum,* into a very shady situation, but if a variety, it is a very extraordinary and beautiful one. Dill

(On rocks at Cocken, Durham, but rare. Mr. Winch. E.)

Filix non ramosa, &c. Pluk. Alm. p. 150. par. the last but one, as corrected according to Mant. p. 78. par. 4. Mountains of Mourne in the county of Down, Ireland. R. Syn.

A. LANCEOLA'TUM. Leaves doubly winged, spear-shaped: wings alternate: leafits inversely egg-shaped, sharply cut and scolloped. Huds.

E. Bot. 240—*Bolt.* 17. 2. (*but less sharply cut than in the preceding figure.*)

Stalk black below, green upwards. *Leaf* bright green. *Capsule* in an advanced state, forming roundish, as well as oblong, patches E. Bot.

SPEAR-SHAPED SPLEENWORT. On old walls and rocks about St. Ives, and other places in Cornwall. Hudson. On a wall in the village of Wharf, Yorkshire. Bolton. (In Whitaker's Craven it is asserted there is no such village. E.) On the great rock at Tunbridge Wells. Mr. Forster. P. May—Sept.

POLYPO'DIUM.† *Capsules* disposed in distinct circular dots on the under surface of the leaf.

OBS. The investigation of the species of this extensive Genus has always been attended with difficulties and uncertainties; partly owing to the prevalence of a general resemblance in habit, partly to the different appearances observable in them at different ages, or to deficiencies in the specific characters. Nor have authors always been scrupulously accurate in the application of the terms used in describing the leaves.

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* (Recommended by Hoffman as an antiscorbutic. E.)

† (Compounded of πολυς, many, and πους, ποδος, a foot; according to Theophrastus, from its root, which extends itself by numerous superficial *cirri,* or radicles, resembling the polypus; and thus supports the plant. E.)

The plants should not be gathered for examination until of sufficient age to attain a full state of fructification. The terms employed in the subdivisions of the species, and in characterizing the individuals, should be precisely understood. The attention should be more particularly directed to the lower parts of the leaves, wings, &c. for there it is that the characters are most constant, and most observable, the extreme parts generally running together so as to baffle every attempt at definition.

The following tabular view of the different British species is offered as a mean of facilitating their investigation; the student, therefore, is advised first to compare the plant in question with these characters, and then to look forward to the descriptions given more at large.*

(1). *Leaves wing-cleft.*

P. *vulga're.* Lobes oblong, somewhat serrated, blunt.

(2) *Leaves winged.*

P. *Lonchi'tis.* Wings crescent-shaped, finely and sharply serrated: stems with chaff-like scales.

P. *Ilven'se.* Wings opposite, triangular, blunt, hairy underneath, very entire at the base.

P. *arvo'nicum.* Wings spear-shaped, wing-cleft, hairy underneath: stems hairy.

P. *Phegop'teris.* Wings strap-spear-shaped, wing-cleft, united at the base, hairy underneath.

P. *Oreop'teris.* Wings strap-spear-shaped, wing-cleft: lobes bluntish: clusters of capsules at the edges.

(3) *Leaves winged; wings deeply wing-cleft.*

P. *Filix-mas.* Wing strap-spear-shaped: lobes blunt, finely serrated: stem chaffy.

P. *Thelyp'teris.* Wings spear-shaped, acute: lobes very entire.

(P. *crista'tum.* Frond pinnate: leaflets pinnatifid, acute: lobes ovate, blunt, crenate, sharply toothed: stalk scaly at the base. E.)

P. *denta'tum.* Wings egg-spear-shaped, opposite: lobes egg-shaped, blunt, sparingly cut at the sides, finely toothed at the end.

P. *fonta'num.* Wings egg-spear-shaped, alternate: lobes deeply scolloped.

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* (Some authors have recently divided this genus; including in *Polypodium* such as have no lid or cover to the capsule: *Aspidium,* cover nearly orbicular, fixed by the centre, separating all round: and *Cystea,* cover orbicular, concave, fixed by a lateral point underneath, finally reflexed and jagged; as will be further illustrated by the synonymes. E.)

(4) *Leaves doubly winged.*

P. *aculea'tum.* Primary wings crescent-shaped, acute: leafits serrated with prickles: stem chaffy.

P. *spinulo'sum.* Primary wings spear-shaped: leafits strap-egg-shaped: wing-cleft, and serrated with fine prickles.

P. *fœ'mina.* Primary wings strap-spear-shaped: leafits slender, acute, wing-cleft or serrated: stems smooth upwards.

(P. *dilata'tum.* Frond bipinnate: leaflets pinnatifid, deeply serrated, tipped with small spines: stalk scaly: involucrum circular. E.)

P. *fra'gile.* Primary wings spear-shaped: leafits wedge, egg, or strap-shaped: segments bluntly or sharply lobed: stem very slender.

P. *trif'idum.* Primary wings spear-shaped, blunt: leafits of the lower wings mostly three-cleft: stem bordered.

P. *rhæ'ticum.* Primary wings spear-shaped: leafits egg-spear-shaped, sharply serrated: lower pairs unequal.

(5) *Leaf triply winged.*

P. *Dryop'teris.* Leaves three on a stem, doubly winged.

(P. *calca'reum.* Frond three-branched: branches doubly pinnate, erect, rather rigid: segments obtuse, somewhat crenate: masses of capsules crowded, finally confluent. E.)

(1) *Leaves wing-cleft; lobes united at the base.*

P. VULGA'RE. Lobes oblong, somewhat serrated, blunt: root scaly.

Ludw. 18—*Curt:*—(*E. Bot.* 1149. E.)—*Fl. Dan.* 1060—*Kniph.* 6—*Bolt.* 18—*Bull.* 191—*Blackw.* 215—*Tourn.* 316—*Walc.*—*Woodw.* 271—*Gars.* 466—*Fuchs.* 588—*Trag.* 540—*Dod.* 464. 2—*Ger. Em.* 1132. 2—*Tourn.* 316—*Ger.* 972—*Matth.* 1293—*Dod.* 464. 1—*Lob. Obs.* 475. 1, *Ic.* i. 814. 2—*Ger. Em.* 1132. 1—*Park.* 1039. 1—*H. Ox.* xiv. 2, *row* 1. 1—*Ger.* 974. 1—*Cam. Epit.* 993—*Lon.* i. 244. 1.

Lobes slightly serrated at the edge. *Fructifications* yellowish brown, in rows, parallel to the rib of the lobes.

COMMON POLYPODY. (Welsh: *Llawredynen y derw.* On old walls, shady places, and at the roots of trees, very common. P. June—Oct.*

Var. 2. Lobes doubly serrated.

Barr. 38.

Walls of Windsor Castle. Ray. Worcestershire. Dr. Stokes.

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* The root is sweetish: by long boiling it becomes bitter. When fresh, it is gently aperient. An infusion of six drachms in half a pint of boiling water may be taken at twice. (Thus far may be matter of fact, though the medicine has long been neglected; but on the wonderful efficacy of several plants of this tribe in removing obstructions of the spleen, liver, and other viscera, it were no longer prudent to insist; for such reports, however sanctioned by the ancients, were, more than two centuries ago, very properly designated by honest Gerard as "old wives' fables, fit only for writers who fill up their pages with lies and frivolous toies." E.)

Var. 3. Lobes sometimes cloven at the end, sometimes enlarged by a lateral appendage.

Bolt. 2. 5. *b. a portion of a leaf.*

In a wood near Bingley, Yorkshire. Mr. Alexander. Braid Hill, near Edinburgh. Mr. Brown.

Var. 4. *Cambricum.* Lobes wing-cleft.

H. Ox. xiv. 2. 8—*Pluk.* 30. 1—*Bolt.* 2. 5. *a., a portion of the leaf.*

In this state it never produces fructification. The same is observable of the waved variety of *Asplenium Scolopendrium.* Lightfoot.

On a rock in a wood near Dennys Powys Castle, not far from Cardiff, Glamorganshire. R. Syn. Near Kidderminster. (With copious fructification, in a wood by the Dargle, Wicklow. Mr. J. T. Mackay. E.)

P. June—Oct.

Var. 5. *Acutum.* Lobes very long, distantly serrated; tapering to an acute point.

Specimen sent by J. W. Griffith, Esq. On rocks in North Wales. Crevices of rocks on the south side of the King's Park, Edinburgh. Mr. Brown.

(2) *Leaves winged.*

P. LONCHI'TIS. Wings crescent-shaped, the convex side downwards: fringe-serrated: stems with chaff-like scales.

(*E. Bot.* 797. E.)—*Fl. Dan.* 497—*Tourn.* 314—*Bolt.* 19—*Matth.* 922—*Ger.* 979—*Ger. Em.* 1140. 3—*Pluk.* 89. 6—*H. Ox.* xiv. 2, *row* 3. 1—*Cam. Epit.* 664—*Park.* 1042. 1—*J. B.* iii. 744—*Lob.* ii. 34. 1.

Leaves in circles round the crown of the root, which is rough with the remains of decayed stalks, keeled, from the wings being bent upwards on each side the leaf-stalks. *Leafits* so closely placed as to be tiled, the lower edge covering the upper edge of the next beneath, serratures frequently but irregularly terminating in short spine-like teeth, furrowed underneath with veins, the margin of the upper half of the base of each leafit parallel to the general stalk. *Stalk* furrowed above. *Fructifications* in dots, disposed in two parallel lines on each leafit. Woodw. *Plant* from four to fourteen inches long, and from one to two inches broad; generally curved. *Leafits,* the larger serratures ending in semi-transparent thorns.

ROYAL POLYPODY. GREAT SPLEENWORT. SPLEENWORT POLYPODY. (*Aspidium Lonchitis.* Sw. Willd. Sm. Hook. E.) Clefts of rocks. On the highest mountains of Carnarvonshire; on Glyder, near Llanberris. (On all the mountains of Breadalbane and Glen-lochai, sometimes two feet high or more, but quite distinct from *P. aculeatum.* Mr. Brown. In clefts of rocks near the summit of Ben Lomond. Rev. T. Gisborne. On Ben Lawers; also near Caldron Snout, Teesdale. Mr. Winch. Hudson's station, "near Bingley," is supposed, (in Whitaker's Craven,) to refer to *P. aculeatum.* In a glen east of Lough Esk, Donegal; and on Glenade mountain, Leitrim. E. Murphy, Esq. E.) P. May—Sept.

P. ILVEN'SE.* Leafits opposite, united, blunt, hairy underneath: very entire at the base.

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* (From the plant having been first observed in the Isle of Elba, (*Ilva.*) Sm. E.)

Dicks. H. S.—*Bolt.* 42—*H. Ox.* xiv. 3. 23—*Pluk.* 179. 4.

Scarcely more than a finger's length. *Stem* greenish, not blackish purple. Linn. *Leafits* six or seven on each side the stem; the lower ones opposite, the upper alternate; thick and opaque; generally cloven into five or seven segments, rounded at the ends.

Opposite-leaved Polypody. *P. Ilvense.* Sw. Willd. Dicks. *Acrostichum Ilvense.* Linn. *Acr. alpinum,* Bolt. Ben Lawers. Mr. Dickson. *Woodsia Ilvensis.* Br. Sm. E.) P. July—Sept.

P. ARVO'NICUM. Leafits spear-shaped, wing-cleft, hairy underneath: stem hairy.

(*E. Bot.* 2023. E.)—*Pluk.* 89. 5—*Fl. Dan.* 391—*Bolton believes his tab.* 9 *to be the same plant.*)

From three to five inches high. *Leafits* seven to fifteen pairs, cloven on each side into five or six segments; spear-shaped, hairy underneath. Bolt.

(Hairy Polypody. *P. arvonicum.* With. Sym. Hull. Fl. Brit. *P. hyperboreum.* Sw. Willd. E. Bot. *Acr. Ilvense.* Huds. *Woodsia hyperborea.* Br. Sm. E.) It is a very rare plant, even on Snowdon. Llwyd, in R. Syn. p. 119. On a moist black rock almost at the top of Clogwyn y Garnedd, facing the north-west, directly above the lower lake. Dr. Richardson, ib. P. July—Sept.

This seems sufficiently distinct from the *P. Ilvense* found on the Scottish Alps by Mr. Dickson. Mr. Griffith thinks that Bolt. t. 9. is only a very small and stiff plant of *P. fragile* gathered in a high and exposed situation; and that it is not the plant found by Mr. Llwyd in Ray's Syn. (Swartz is also decidedly of opinion that this plant is different from *P. Ilvense.* E.)

P. PHEGOP'TERIS. Lowermost leafits reflexed, each pair united at the base by a four-cornered little appendage.

Bolt. 20, (*the lowermost pair of leafits not accurately represented.* E.)—*H. Ox.* xiv. 4. 17, *f.* 3, *the quadrangular appendage not expressed.*

Leafits spear-shaped, wing-cleft. Linn. *Plant* sometimes nineteen, and *stalk* twelve inches, high. *Leafits,* the lowermost pair not confluent as all the rest, and placed an inch and a half from the pair above it; in a vigorous plant bent almost back to back, in consequence of which, when dried and gummed on paper, they form an acute angle with the stalk, and might lead those who had not seen the plant growing, to suppose they grew in the same plane with the rest. *Lobes* semi-elliptical. Woodw. Whole *plant* hairy.

Wood Polypody. (The specific name *φεγοπτερις,* seems inappropriate, the plant not generally frequenting *Beech*-woods. E.) Clefts of rocks in moist and shady places and woods, in Yorkshire, Westmoreland, Devonshire, and the Lowlands of Scotland. Barrowfield Wood near Kendal; by the fall of Lowdore; near Derwent Water. Mr. Woodward. (In Cawsey Wood, and in Waskerley Bourn, Durham. Winch Guide. On the banks of Loch Lomond. Rev. T. Gisborne. E.) P. June—Oct.

P. OREOP'TERIS. Leafits strap-spear-shaped: segments very entire, bluntish: clusters of capsules at the edges.

E. Bot. 1019—*Fl. Dan.* 1121—*Bolt.* 22

(Three times the size of *P. Thelypteris*. The peculiar characteristic of this species is the yellowish resinous *glands* sprinkled over the back of the leaves. These sometimes exhale a sweet smell, as remarked by Mr. Teesdale. E. Bot. E.) *Stem* smooth, with two furrows; ten to fifteen inches high or more. *Wings*, the upper and lower ones alternate; segments strap-spear-shaped, blunt, either entire, or finely serrated. The two or three lower pairs of wings gradually shorter, and the lowest pair often pointing downwards. *Fructifications* always at the edge of the lobes, both in the young and more advanced state, never becoming confluent.

Heath Polypody. (Welsh: *March-redynen y mynydd. Rhedyn Mair*. E.) *Polypodium montanum*. Vogl. *P. Thelypteris*. Huds. Lightf. Bolt. (*Aspidium Oreopteris*. Sw. Willd. Sm. Hook. E.) Woods at Castle Howard. Mr. Teesdale. Moist woods near Darlington; never on dry hills in that neighbourhood. Mr. Robson. In a wood at Old Foot's Well, near Bromsgrove; and in a lane near the Bell Inn at Erdington. Miss Reid. More frequent in mountainous situations than any other species. Mr. Griffith. (Common in Scotland, but always in somewhat marshy ground, never on dry hills, as Mr. Dickson alleges. Mr. Brown. Coleshill Heath, and Corley, Warwickshire. Bree, in Purt. E.)
P. July—Oct.

(The fragrant scent of this species is supposed to have induced Hudson to imagine it the *P. fragrans* of Linnæus. E.)

(3) *Leaves winged; wings deeply wing-cleft.*

P. Fi'lix-mas. Leaves almost doubly winged: leafits strap-spear-shaped: lobes blunt, finely serrated: stem and mid-ribs chaffy.

Dicks. H. S.—*Kniph.* 6—(*Hook. Fl. Lond.* E.)—*E. Bot.* 1458 *and* 1919, *the latter by mistake named Aspidium cristatum.* E.)—*Woodv.* 49—*Bull.* 183—*Tourn.* 310 *to* 312—*Bolt.* 21—*Ger.* 969. 1—*Fuchs.* 595—*J. B.* iii. 738—*Dod.* 462. 1—*Blackw.* 323—*Gars.* 271—*H. Ox.* xiv. 3. 6—*Matth.* 1290—*Cam. Epit.* 991—*Park.* 1036—*Lob. Obs.* 473. 4. *Repr. in. Ic.* 1. 812. 1, *and Ger. Em.* 1128.

From one foot and a half to four feet high. *Lobes* of the wings strap-shaped, the ends rounded. *Fructifications* from three to eight on each lobe, placed in two rows near to its base and distant from its edges; none at the end.

Male Polypody. Male Fern. (Welsh: *March-redynen wrryw*. Gaelic: *Raineach*. *Aspidium Filix-mas*. Sw. Willd. Sm. Hook. E.) Woods, heaths, stony places, and shady banks. P. June—Oct.*

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* The Siberians boil this Fern in ale, and are fond of the flavour which it imparts. The powder of the root (not unknown to the ancients as an anthelmintic, E.) is the celebrated Swiss remedy to expel the tapeworm. See Dr. Simmons's account of the *Tænia*; (also Linn. Tr. vol. ii. p. 247. E.) I have frequently used it, and seldom without the desired effect. (An essential oil extracted from the same plant is used on the Continent, and proves equally efficacious, in doses of ten or more drops. In the reign of Henry the Sixth, so great a famine prevailed, that Fern roots were used for the purpose of making bread. It would be difficult now to ascertain the exact species, but probably the largest and most common kind. This Fern, and the *Pteris aquilina*, are burnt together for the sake of their ashes, which are purchased by soap and glass makers: the island of Jura alone yields one hundred and fifty pounds worth of these ashes annually. Gunner relates that in Norway the young curled leaves are boiled and eaten like asparagus; and that the larger leaves, dried and infused in hot water, afford an acceptable fodder and litter for cattle, in hard winters. It is used for rough thatching and beds, as the Highland Heather. The larger Ferns, either dug in, or burnt on, the ground, enrich

P. THELYP'TERIS. Leafits wing-cleft: lobes very entire, the under surface entirely covered by clusters of capsules.

Hedw. Theor. 6—(*E. Bot.* 1018. E.)—*Schmid.* 11. 1. 2—*Bolt.* 43—*Fl. Dan.* 760—*Mapp.* 7. *a, at p.* 106—*J. B.* iii. 739. 1—*Ger.* 981. 3—*Ger. Em.* 1135. 1—*Park.* 1041. 1.

Its habit like *P. Filix-mas.* *Stem* smooth. Old leafits covered with capsules. *Barren leaves* broader and blunter. Linn. *Root* small, creeping. Dicks. *Wings* deeply divided, but the divisions do not reach to the midrib. *Lobes* when in seed much contracted, and narrower than before the capsules are fully formed, but this circumstance is very general through the whole tribe. (The slender creeping *root,* and the crossing, but separate *leafits,* distinguish this species from every other. Sm. E.)

MARSH POLYPODY. (Welsh: *March-redynen y gors.* *P. Thelypteris.* Linn. Mant. Syst. Veg. *Acr. Thelypteris.* Linn. Sp. Pl. Bolt. (*Aspidium Thelypteris.* Sw. Willd. Sm. Hook. E.) In Bogs. St. Faith's Newton Bogs, near Norwich. Mr. Pitchford. Near Bungay, Suffolk. Mr. Woodward. In a moist dell at the foot of Snowdon, near Llanberris. Mr. Aikin. (At Lound, near Yarmouth. Mr. Dawson Turner. Leath Hill, Surry. Mr. Winch. West side of Llyn-llwydiart, Anglesey. Welsh Bot. E.) P. July—Oct.

(P. CRISTA'TUM. Fronds pinnate: pinnæ subcordate, oblong, pinnatifid: the segments oblong, obtuse, dentato-serrate: stipes chaffy. E.)

(*Hook. Fl. Lond.* 113—*E. Bot.* 2125. E.)

(*Fronds* many from the same root, yellow green, one to two feet high, linearo-lanceolate, erect, rather rigid, nearly bipinnate. *Stipes* green, beneath dark purple, on the upper side channelled, smooth, every where chaffy, scales ovate, acute, membranous, pale brown. *Pinnæ* upon the sterile fronds most approximate, upon the fertile ones more distant, all alternate, cordato-oblong, more or less attenuated, but obtuse at the apex, towards the middle three inches long, the inferior ones somewhat shorter, the superior ones gradually decreasing, and terminating in a short acuminated point. *Rachis* smooth. *Pinnules* or the segments of the pinnæ, alternate, oblongo-ovate, obtuse, at the base confluent with the flexuose nerve, smooth, the inferior ones somewhat lobed, at the margins irregularly and obtusely serrated, the rest have the margins inciso-serrate. *Fructification* dorsal, on the superior pinnæ disposed in a double series between the margin and the nerve of the segments. *Sori* roundish. *Indusium* membranaceous, pale brown, almost white, between round and reniform, fixed at the sinus, the margins free. *Capsules* numerous, small, spherical, brown, upon long foot-stalks, reticulated, surrounded by an elastic, articulated, incomplete ring, bursting transversely. *Seeds*

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the soil greatly by their saline particles; and thus Horace, though not without a moral inference, Lib. i. Sat. 3. 37,

> "Neglectis urenda *Filix* innascitur agris."

Scarcely any production of a tropical climate can present a more truly elegant appearance than does this and the sister Fern, of luxuriant growth, as fringing or feathering the high banks of the narrow lanes of South Devon. The Scotch term *Bracken,* (like Gowan,) we conceive to be rightly understood as generic, including several different plants, and thus it would seem to be almost indifferently applied both to our present species and *Pteris aquilina.* E.)

round, deep brown tuberculated. Hook. Readily distinguished from its affinity to *P. filix-mas* by its yellow green hue, and broad pinnæ. E.)

(CRESTED POLYPODY. *P. cristatum.* Linn. *Aspidium cristatum.* Sw. Sm. Willd. Hook. This very rare plant was discovered in boggy parts of the heath between Holt and Hempstead, Norfolk, by the Rev. R. B. Francis; also among alder bushes in bogs at Westleton, Suffolk, by D. E. Davy, Esq. F.L.S. P. Aug. Fl. Lond.

We suspect that Mr. Brown's specimens in With. Herbar. from Ben Bourde in Aberdeenshire ought rather to be considered this species than *P. dilatatum.* E.)

P. DENTA'TUM. Leafits opposite, wing-cleft: lobes sparingly cut at the sides, finely toothed at the ends: stem very slender.

Dicks. H. S.—(*E. Bot.* 1588. E.)—*Dicks. Fasc.* iii. 7. 1.

Nearly resembles *P. fragile* in size and habit. *Root* small, fibrous, bundled, a little woolly. *Stems* several, slender pale brown, shining, somewhat scaly at the base. *Leaf* spear-shaped, doubly winged. *Wings* distant, spear-shaped, mostly alternate. *Leafits* egg-shaped, blunt, cut, unequally toothed; teeth distant, blunt, pale brown. Clusters of *capsules* near the incisions, towards the edge. Dicks.

Such is the account given by Mr. Dickson of this new species of *Polypodium*, which he first discovered in clefts of rocks in the Highlands of Scotland; but, though this description and his specific character mention it being doubly winged, neither his own figure, nor the specimens sent out in his Fasciculi of dried plants, authorize us to say that they are so. They are only simply winged, and the wings divided into lobes, nor have they any proper mid-rib. *P. dentatum* of Forsk. in Gmelin's Syst. Nat. is a different plant.

(TOOTHED POLYPODY. Welsh: *Fiol-redynen ddeintiawg.* *P. dentatum.* Dicks. Hull. *Aspidium dentatum.* Sw. Willd. Hook. *Cyathea dentata.* Sm. On rocks between Widdy Bank and Caldron Snout, Durham. Rev. J. Harriman, in Winch Guide. On rocks north of the mansion of Trejorwerth, Anglesey. Welsh Bot. E.)

P. FONTA'NUM. Leafits alternate, triangular, blunt, deeply wing-cleft: lobes sharply toothed at the end: stem very slender.

(*E. Bot.* 2024. E.)—*Lob. Adv.* 361. 2, *and Ic.* i. 810. 1—*Bolt.* 21—*Barr.* 432. 1—*Pluk.* 89. 2 *and* 3—*Ger.* 980. 2.

Its habit resembling *P. fragile*, but the leafits closer together and not so deeply lobed. *Fructifications* in large dots, proceeding not from a roundish scale, but from an oblong white slender valve or chink. Linn. *Plant* three or four inches high. *Stamens* pale green, thread-like. *Leafits* alternate. Bolt.

(SLENDER-STEMMED POLYPODY. *Aspidium fontanum.* Sw. Willd. *Asplenium fontanum.* Sm. Old walls and rocks. Rocky places near Wybourn, Westmoreland: also in Buckinghamshire. Bolt. P. June—Sept.

(4) *Leaves doubly winged.*

P. ACULEA'TUM. Primary wings crescent-shaped: leafits rhomboidal, with prickly teeth: stem chaffy.

Mill. Ill.—*Bolt.* 26. 1 *and* 3—*H. Ox.* xiv. 3. 15, *f.* 1—*Pluk.* 179. 6, *a young plant only winged.*—*Pluk.* 180. 1, *fully grown.*—*Pluk.* 180. 3, *in its middle state of growth.*—(*E. Bot.* 1562, *margin of the pinnule incorrect.* E.)

Sometimes half a yard high. *Leafits* irregularly rhomboidal, with a projecting angle on the upper edge near to the mid-rib. The leafits immediately adjoining to the primary mid-rib are very unequal in size, the uppermost being the largest, and having its lower edge parallel to the primary mid-rib. In a young state, the leaf is only simply winged, as represented in Bolton's pl. 26, fig. 2. (*Primary wings* one to two feet in length, of a true lance-shape, broadest in the middle, decreasing gradually towards the extremities: the *rib* channelled on the upper side. *Second-leaves*, one or two of the lowest pairs placed opposite, becoming gradually alternate upwards. *Lobes* from eight to twenty, the first pairs divided down to the nerve, thence gradually becoming confluent, losing themselves in the acute prickly termination of the second leaf. *Seed-vessels* near the top of the plant in two regular rows; lower down less regularly placed on the lobes. Bolt. E.)

(The most able Botanists are divided in opinion as to the identity of this species and *P. lobatum*; and different characteristics have been assigned to each, without producing general conviction; a proof, at least, that the specific distinction, if any, must be very obscure. Vid Smith in E. Bot. Hook. Fl. Scot. 154. Grev. Fl. Edin. 221. Purt. Mid. Fl. 509. 510. E.)

PRICKLY POLYPODY. (Welsh: *March-redynen wrychog*. *Aspidium aculeatum*. Sw. Willd. Sm. Hook. *A. lobatum*. E. Bot. 1563? E.) Woods and shady places. In a ditch in a meadow at the Valley, near Bromsgrove. Miss Reid. In a ditch near Elmdon House, Warwickshire. (Shepscombe Wood, near Painswick. Mr. Oade Roberts. Rocks near the bottom of Benroyd Clough Norland; and in a little wood called Toadholes, in Sowerby Dean, both near Halifax. Mr. Bolton. Near Lleiniog castle, Anglesey. Welsh. Bot. E.) P. June—Oct.

Var. 2. Leaves sprinkled with a moss-like down. Pluk.

P. SPINULO'SUM. Primary wings spear-shaped: leafits strap-egg-shaped, wing-cleft, and serrated with sharp-pointed teeth.

(*E. Bot.* 1460. E.)—*Fl. Dan.* 707.

This has been taken for *P. cristatum*, but it is very different from that; of a more delicate and transparent texture, the *leaf-stalk* but little, if at all, scaly, the opposite leafits on the wings not unequal in size, and the mid-rib of the *leafits* serpentine. It agrees with it in the disposition of the fructifications, and in the serratures ending in short awns.

(LESSER CRESTED POLYPODY. Welsh: *March-redynen eddiawg*. *P. spinulosum*. Fl. Dan. Retz. *Aspidium spinulosum*. Willd. Sm. In Causey Wood, Durham; near Chart Park, Surry. Mr. Winch. Danbury, Essex. Mr. W. Christy. On Bodafon mountain, Anglesey. Welsh Bot. E.) Bogs on Birmingham Heath. Holloways in Devonshire.

P. July—Sept.

P. FILIX-FÆ'MINA. Leafits strap-spear-shaped, wing-cleft, acute: stems smooth upwards.

Pluk. 180. 4—*H. Ox.* xiv. 3. 8—*Bolt.* 25—*Mont.* 288. 84—*J. B.* iii. 738—(*Fl. Dan.* 1346. *P. Filix-mas.*—*E. Bot.* 1459. E.)

Fructifications egg-shaped, somewhat fringed, solitary. Linn. *Leafits* deeply cut with one or two divisions; the teeth often ending in a short awn. Woodw. The most elegant of all our Ferns. One cluster of *capsules* on each lobe of the leafit. Bolt. So that in a ripening state the whole of the leafit seems covered by them, whilst in *P. Filix-mas* the upper end is always bare. The lower pair of *leafits* on each wing, that is, the pair next to the principal or primary leaf-stalk, stand close to it, and parallel with it, pointing upward and downward. The breadth of the *leafits* varies considerably in different plants, but when they are narrow and the wings distant, the whole has a remarkably light and elegant appearance.

Female Polypody. (Welsh: *March-redynen fenyw. Aspidium Filix-fœmina.* Sw. Willd. Sm. Hook. E) Moist and shady marshy places. Moist rocky woods; about rivulets, and on heaths. Lewesdon Hill. Mr. Baker. (Knot's-hole, near Liverpool. Dr. Bostock. Custom Scrubs, near Painswick, Gloucestershire. Mr. O. Roberts. In Anglesey. Welsh Bot. E.) P. June – Sept.

(*Aspidium irriguum,* E. Bot. 2199, scarcely one-fourth so large as the preceding, of which, nevertheless, some good Botanists have thought it a variety; and, indeed, after long cultivation, though raised originally from seed, it considerably approaches that species. In a wild state the *fronds* are of a more narrow lanceolate figure, and of a paler pellucid green; the main *stalk* occasionally scaly, but in general quite smooth, and exactly quadrangular, though the latter circumstance varies. *Leafits* shorter, and somewhat less linear than in *F. fœmina,* deeply serrated, or partly pinnatifid, their segments sharply cut, without bristly points.

About the margins of clear springs. Several places near Tunbridge. Mr. T. F. Forster. Eng. Fl. Abundant at Tintern. Mr. W. Christy. E.)

(**P. dila'tatum.** Frond doubly winged: leaflets deeply wing-cleft: segments oblong, blunt, sharply cut, tipped with little spines: common stalks scaly: involucrum circular.

E. Bot. 1461—*Mull. Frid.* 2. 4—*Pluk.* 181. 2—*Bolt.* 23.

In moist rich soil three or four feet high, and trebly winged; on dry rocks on banks about a foot high, the first pair of wings the largest, and the only pair that are triply divided. Bolt. Serratures ending in short awns. Woodw. *Stem* scaly all the way up. Lower leaves of the lower wings larger and longer than those opposite to them. First leaves from six to thirty inches high; rib destitute of leaf more than half its length; general figure of the leaf triangular, tapering upwards to a point. Second leaves of a triangular figure, tapering to the extremity. Bolt.

(**Scaly-stemmed Polypody.** Welsh: *March-redynen cang. P. dilatatum.* Hoffm. *P. cristatum.* Huds. Lightf. With. Schreb. Bolt. *Aspidium dilatatum.* Willd. Sm. Hook. A variable plant, totally distinct from the real *P. cristatum* of Linn. A very rare species. Moist woods and shady places in a gravelly soil. In crevices of moist rocks and old walls; and in marshy places at the roots of decaying oaks. On Ben Bourde, a mountain seven miles north-west from Invercauld, Aberdeenshire. Mr. Brown. [These specimens greatly resemble the real *P. cristatum* of Linn. E.] Plentiful in the parish of Halifax. Mr. Bolton. Coughton lane, and Spernall, Warwickshire. Purton. On the walls of the church of St. Sancret, Cornwall. Rev. J. Pike Jones. In woods in the parish of Brislington, near Bristol. P. June—Sept. E.)

P. fra'gile. Primary wings spear-shaped: leafits with a few irregular teeth towards the end: stem very slender and brittle.

Var. 1. Primary wings long, spear-shaped, acute, distant; leafits distant, pointed.

(*E. Bot.* 1587. E.)—*Bolt.* 46—*Fl. Dan.* 401—*Pluk.* 180. 5—(*H. Ox.* xiv. 4. 28. E.)

From four to seven inches high. *Stem* red, bare for about two inches at the base; smooth, slender, brittle. *Leafits* more than twice as long as they are broad. In habit appproaching nearly to *P. rhæticum,* but it is not distinctly doubly winged like that plant, nor are the lobes of the leafits regularly serrated at the edges, as in that.

Var. 2. Primary wings spear-shaped, acute; leafits crowded.

Bolt. 27—*Barr.* 432—*J. B.* iii. 741. 2—*Seguier.* 1. 1.

From two to six inches high. *Stem* red, bare for half to one and a half inch from the base; smooth, brittle, but less slender than in the preceding. *Leafits* not equal in length to twice the breadth.

Var. 3. Primary wings spear-shaped, blunt.

About three or four inches high. *Stem* red, bare for half to one inch from the base; smooth, brittle, slender.

This has a general resemblance to *P. dentatum,* but differs from that in the colour of the stem, in being doubly winged, and in the want of fine teeth at the ends of the lobes.

Mr. Griffith, of Garn, Denbighshire, favoured me with specimens of these three varieties gathered from the same root, and I have seen a single specimen uniting the characters of the two former.

Brittle Polypody. (*Aspidium fragile.* Sw. Willd. Hook. *Cyathea fragilis.* Roth. *Cystea fragilis.* Sm. Dry stony places, and old buildings, in the mountainous parts of Britain. P. June—Sept.

P. trif'idum. Primary wings spear-shaped, blunt: leafits of the lower pair of wings mostly three-cleft: stem bordered.

E. Bot. 163.

Three or four inches high. *Stem* brown green, slender, bare for one inch or more at the base; edged with a narrow border on each side. *Wings* nearly triangular; leafits three-cleft, the middle segments sometimes notched.

I am indebted to J. Wynne Griffith, Esq. for a beautiful specimen of this plant. It is sufficiently distinct from *P. fragile,* though in habit much resembling our third variety of that species. Both this and *P. fragile* have their capsules in a globular cyst, which seems attached to the foliage at one point only, and readily separates from it. (Dr. Greville considers them the same, and states that he possesses specimens "exactly intermediate." E.)

(Three-cleft Polypody. *P. regium.* Linn. *Aspidium regium.* Sw. Willd. Hook. *Cystea regia.* Sm. *Cyathea incisa,* E. Bot., where it is mentioned as having been found by Mr. T. F. Forster, jun. on a wall near Walthamstow, and that he thought it distinct from *P. fragile.* Mr. Griffith found it on Cwm Idwell. Rocks at the dropping well, Knaresborough. Mr. W. Christy. Ben Lawers. Maughan, in Hook. Scot. E.)

P. rhæ'ticum. Primary wings spear-shaped, distant: leafits deeply lobed: lobes regularly toothed at the edge.

Dicks. H. S.—*Bolt.* 45 and 2. 6.

Seven or eight inches high. *Stem* red, smooth, slender, convex on one side, bare for two or three inches from the base. *Wings* distant, spear-shaped, acute; leafits strap-spear-shaped, the edges toothed. Mr. Bolton has very well observed, that the *wings* are distinct all the way up, not becoming confluent at the top, and that the *leafits* on the upper side the secondary mid-rib are larger than those on the lower, by which it may be distinguished from *P. fragile.* The regular serratures on the sides of the lobes also afford a good distinction, the lobes in *P. fragile* being only serrated towards the end, and that very irregularly.

(Red-stemmed Polypody. *P. rhæticum.* Dicks. Bolt. *Aspidium rhæticum.* Willd. *Cyathea fragilis,* β and γ. Fl. Brit. *Cystea angustata.* Sm. E.) Shady rocks, Scotland. Mr. Dickson. Mountains in Westmoreland. Top of Glyder mountains, on the side which hangs over Llyn Ogwen Lake; and near Ffynnon felon. On walls near Ambleside, Westmoreland. Mr. Woodward. On the Leek road, a quarter of a mile from Buxton. P. June—Sept.

(5) *Plant triply winged.*

P. **Dryop'teris.** Stem supporting three-winged or doubly winged leaves.

(*E. Bot.* 616. E.)—*Kniph.* 12—*Bolt.* 28—*Trag.* 538—*J. B.* iii. 741. 1—*Lon.* i. 224. 2—*Ger.* 974. 2—*Clus.* ii. 212. 1—*Ger. Em.* 1135. 3—*Park.* 1044, *middlemost figure*—*H. Ox.* xiv. 4. 19.

Fructifications near the rib of the secondary wings. Bolt. *Plant* from five to eight inches high. The three *leaves* placed near the end of the stem, one terminal and one on each side. The Rev. Mr. Baker observes, that, "at the point where the lower pair of pinnæ branch from the stem the plant forms an obtuse angle and leans backward. This appears to be occasioned by four strong glands on the upper side of the stem and two on the lower. These glands attend the angles formed by the other wings, but decrease as they advance."

(Three-branched Polypody. E.) Dry stony places in Yorkshire, Lancashire, Westmoreland, and Scotland. Amongst the rocks at the fall of Lowdore, on the side of Derwent-water, Cumberland. Barrowfield Wood, near Kendal, and other rocky woods in the North. Mr. Woodward. In woods north-east of the road up Frocester Hill, Gloucestershire. Mr. Baker. (Needwood Forest. Hon. Mr. Bagot. In abundance near the seat of the Rev. Thos. Gisborne, at Yoxal, Staffordshire. Rocky lane bank, leading from Shepscombe, near Painswick, towards the Cheltenham road. Mr. Oade Roberts. Canton Rough, a quarter of a mile above Bridgnorth. Mr. Purton E.) P. June—Sept.*

(Mr. Brunton has found a large variety of this plant near the first waterfall in Hackfall, Yorkshire, so different in appearance from the proper state, that a young Botanist would be at a loss to know to what species to refer it. Bot. Guide. 722. E.)

(P. **calca'reum.** Frond three-branched: branches doubly pinnate, erect, rather rigid: segments obtuse, somewhat crenate: masses of capsules crowded, finally confluent.

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* (Derives its specific name, δρυοπτερίς, from being occasionally found among the mossy roots of oak trees. It has been supposed to possess medical qualities somewhat similar to those of its congeners. E.)

E. Bot. 1525—*Bolt.* 1. 1.

Root stouter and less extending than in the preceding species. *Frond* more firm and rigid; *stalk* more scaly about the lower part. *Branches* smaller, rigid, and not loosely spreading. *Masses* of *capsules* of a browner hue, more crowded. Sm.

RIGID THREE-BRANCHED POLYPODY. *P. calcareum.* Sw. Wild. Sm. Purt. *P. Dryopteris.* var. Bolt. On mountainous heaths, or in woods, on a limestone soil. In White Scars, near Ingleton, Yorkshire; and in the Peak of Derbyshire. Bolton. Cheddar Rocks, Somersetshire. J. W. Griffith, Esq. P. July. E.)

ADIAN'TUM.* *Capsules* forming oval spots under the ends of the leaves, which are folded back.

A. CAPIL'LUS-VEN'ERIS. Leaves doubly compound: wings alternate: leafits wedge-shaped: lobed, on leaf-stalks.

Dicks. H. S.—*Jacq. Misc.* ii. 7—*Bull.* 247—*Bolt.* 29—(*E. Bot.* 1564. E.) *Tourn.* 317. 2—*Ger.* 982 2—*Tourn.* 317. 2—*Cam. Epit.* 921—*Park.* 1049. 1—*Matth.* 1201—*J. B.* iii. 752—*Lob. Adv.* 361. 1, *Ic.* i. 809. 2—*Gars.* 125. *A.*—*Ger.* 982. 1—*Fuchs.* 82—*Trag.* 531—*Dod.* 469. 2—*Ger. Em.* 1143. 1.

About five or six inches high. *Leafits* fan-shaped, with four or five notches at the end of a very delicate semi-transparent green, which it retains in a dry state.

TRUE MAIDENHAIR. Rocks and moist walls. Barry Island and Port Kirig, Glamorganshire. Mr. Lhwyd. Isle of Arran, near Galloway. Mr. Stonestreet. South Islands of Arran. Mr J. T. Mackay. Eng. Fl. Banks of Carron, a rivulet in Kincardineshire. Prof. Beattie, in Hook. Scot. E.) P. May—Sept.†

TRICHO'MANES.‡ *Fructifications* on the edge of the leaf, solitary, urn-shaped; ending in a thread-shaped style.

T. TUNBRIDGEN'SE. Leaves winged: wings oblong, forked, decurrent, toothed.

(*Hook. Fl. Lond.* 71. E.)—*Fl. Dan.* 954—*E. Bot.* 162—*Pluk.* 3. 5—*Bolt.* 2. 7—*H. Ox.* xv. 4. 50.

Wings sometimes, not always, serrated or scolloped. Bolt. *Wings* elliptical, narrow; teeth sharp. Woodw. *Leaves* all producing fructifications when growing in an open exposure, but in chinks of shady rocks they become luxuriant, assuming the appearance of *T. pyxidiferum*, and never bearing fructifications. Griff. *Capsules* two-valved, furnished with an elastic ring, and placed round the style-like column within the two-leaved involucrum. Sm.

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* (So called from ἀ, privative, and διαίνω, to moisten or become wet; because its leaves are said to resist moisture; but how far this name may have been originally applied to our plant seems questionable. Hippocrates describes the Fern of the ancients as καλλίφυλλον, beautiful-leaved; Theocritus χλοερὸν ἀδίαντον, the green *Adiantum*. E.)

† (This very elegant plant is chiefly used for making syrup of capillaire; for which purpose also the more common *Asplenium trichomanes* is occasionally substituted; an immaterial imposition, as neither plant seems to possess either pectoral, or any other active virtues. This Fern may be increased by planting in pots of lime rubbish, but sometimes requires shelter in the winter. E.)

‡ (From θρὶξ, τριχος, hair. Respecting the latter part of the name etymologists are not agreed. The term, so far as intelligible, would seem to refer to the slender shining stalks common to most Ferns, which occasioned such plants to be called capillary herbs; and also to the reputation of improving the growth of human hair, an inference equally futile with many others deduced from analogous appearances. E.)

TUNBRIDGE GOLDILOCKS. (Welsh: *Rhedynach teneuwe. Hymenophyllum Tunbridgense.* Willd. Sm. Hook. Moist clefts of rocks and stony places. Near Tunbridge. Amongst the pebbles at Cockbush, on the coast of Sussex. On Dartmore, Devonshire; and on the mountains of the North. On rocks in a shady dell, very near Llanberris. Mr. Aikin. (At Lowdore waterfall, abundant. Mr. Winch. At the Cil-hepste waterfall, near Pont-nedd-vechan, and on Brin-cous near Neath, Glamorganshire. Mr. Dillwyn. E.) P. May—Oct.

Var. 2. Fructifications on naked fruit-stalks.

Bolt. 31.

Its habit, as represented by Mr. Bolton, is considerably different from that in E. Bot. and though the latter has indeed fruit-stalks springing from the mid-rib, they are not naked, but pass within the substance to the edge of the leaf.

Rocks under Dolbadern castle, near the lake of Llanberris; and on the rock called Foal-foot on Ingleborough, Yorkshire. Bolton.

(T. ALA'TUM.

Hook. Fl. Lond. 53—*E. Bot.* 1417—*Bolt.* 30—*R. Syn.* 3. 3. *p.* 128.

As this rare plant has hitherto been but imperfectly understood, we transcribe the very elaborate description of Dr. Hooker.

Caudex creeping, the thickness of a sparrow's quill, clothed here and there with thick, downy roots. *Stipe* two to four inches long, flexuose, with a membranous margin. *Frond* four inches to a span high, ovato-lanceolate, triplicato-pinnatifid. The primary pinnæ three inches long, the upper ones gradually shorter; and those as well as the secondary ones ovato-lanceolate, with the laciniæ linear, undivided, emarginate, or bifid, and the margins entire; furnished with a slender brown nerve or mid-rib, prominent on both sides, and running through the middle. Rachis winged with a broad foliaceous margin. The substance of the frond is membranous, smooth, beautifully reticulated, with roundish areolæ. Colour brownish green. *Involucres* in the axils of the pinnulæ, solitary, of one leaf, oblongo-turbinate, between carnose and membranous, not serrated, but slightly notched on one side; the sides winged. *Receptacle* in the centre of the involucre, filiform, exserted. *Capsules* rounded, sessile, fixed by the disk, compressed, brown, collected together near the middle of the receptacle, their disk reticulated, the elastic ring large. *Seeds* round.

WINGED-STALKED GOLDILOCKS. *T. alatum* and *T. brevisetum.* Br. in Hort. Kew. (*T. brevisetum.* Eng. Fl. E.) *T. pyxidiferum.* Huds. and Bolt., but not of Linn. *T. pyxidiferum*, and *T. Tunbridgense*, var. 3. With. *Hymenophyllum alatum*, E. Bot. *H. Tunbridgense* β. Fl. Brit. *Filix humilis repens.* Ray. On dripping rocks; first observed by Dr. Richardson, at Belbank, half a mile from Bingley, Yorkshire, at the head of a remarkable spring, as recorded by Dillenius in Ray Syn. Found there also by Mr. Teesdale, in 1782, but has been since extirpated, according to Hailstone in Whitaker's Craven. In Ireland it is more common, having been discovered at Powerscourt waterfall, and in several spots of the romantic parts of Kerry. On shady banks and rocks exposed to the spray of the waterfall above Turk Cottage, Killarney, growing with the very rare *Jungermannia Hutchinsiæ*. Mr. Mackay. E.)

MUSCI.

SPHAG'NUM.* Barr. Fl. club-shaped: *Anthers* flat: *Caps.* on the same plant, sessile: *Mouth* smooth, covered with a lid, without any entire veil.

S. PALUS'TRE. Branches bent downwards, (swollen: leaves ovate, blunt, ventricose. E.)

Hedw. Th. 12. 42 *to* 45, *and* 13. 46. 47, *Hist.* i. 1. 1, *Ib.* ii. 3. 9—(*E. Bot.* 1405—*Musc. Brit.* iv. E.)—*Vaill.* 23. 3—*Dill.* 32. 1—*Fl. Dan.* 474—*Schmid.* 58. 5—*Pluk.* 101. 1—*Scheuch. It.* i. 5, 4, *at p.* 38—*Lob. Ic.* ii. 242. 2—*Dod.* 472. 1—*Ger. Em.* 1559. 1—*Park.* 1306, *n.* 1.

The *capsules* burst with a cracking noise. Linn. *Stems* growing many together, from three to twelve inches high, upright, sometimes divided. *Branches* at short distances, two, three, or four from the same part, heavy and hanging down from abundance of moisture. *Leaves* white, egg-shaped, concave, soft, tiling the branches. *Capsules* at first sessile, but afterwards they attain short fruit-stalks. Dill. *Involucrum* scaly. *Capsules* nearly globular, when open urn-shaped, generally several together at the top of the stem. *Lid* convex, pointed, deciduous.

GREY BOG-MOSS. (*S. latifolium.* Hedw. Sm. Purt. *S. obtusifolium.* Hoffm. Hook. Grev. E.) Common peat bogs. P. July—Aug.†

Var. 2. The whole habit more slender, more branched; capsules smaller.

Schmid. 58. 6—*Dill.* 32. 2—*Hedw. Hist.* i. 3. 3—*Mapp. at p.* 200. *C.*—*E. Bot.* 1406—*Musc. Brit.* iv. E.)

(*S. capillifolium.* Hedw. Sm. *S. acutifolium.* Ehrh. Hook. Grev. E.)

Var. 3. Whole plant of a beautiful peach colour.

On Bogs in the New Forest, Hants.

In var. 1, the leafits are concave, oblong, blunt; in 2, flat, awl-shaped, sharp.

S. ALPI'NUM. Somewhat branched, upright: (leaves bristle-shaped, straightish: capsule somewhat ovate, furrowed: stalk zigzag: veil fringed. E.)

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* (A name adopted from Pliny by Dillenius and Linnæus; but to what kind of Moss it was originally applied cannot now be ascertained, any more than its correct signification. E.)

† (Mr. W. Curtis obtained the reward of the Society of Arts for his valuable application of this Moss to the packing of young trees for exportation. It should be laid in courses between the trees, and being wonderfully retentive of moisture, and seeming to possess an antiseptic property, which totally prevents fermentation or putrefaction, vegetation actually proceeds during the time the trees remain enclosed. Month. Mag. vol. 28. 309. Used by the Lapland women to wrap their children in: cradles thus lined affording an excellent defence from cold. This genus of plants is singularly elegant, even to the naked eye, but far more interesting when its beauties are displayed under the lens. E.)

(*E. Bot.* 1491—*Musc. Brit.* xvi—*Dill.* 32. 3 *and* 47. 33. E.)

Of a beautiful green colour. *Capsules* egg-shaped. *Leaves* strap-spear-shaped, pointing three ways. Neck. In a dense compact tuft, about a finger's length, sometimes dividing in the middle into two or three branches. *Leaves* a splendid intense green, long, narrow-pointed, straight, stiff. (Mr. Griffith brought from Snowdon plants of *S. alpinum*, and placed them under a waterspout, where they soon became *Bryum flexuosum*. Its luxuriant growth in bogs accounts for its want of capsules. When this plant is moist, Mr. Griffith observes, the capsules lie concealed amongst the leaves by a singular hygrometric quality in the fruit-stalk; but as the moisture exhales, they become nearly upright by several spiral revolutions from right to left. In *B.* (*Mnium*) *heteromallum* the revolutions of the fruit-stalk are reversed. E.)

(ZIGZAG BOG-MOSS. *Dicranum flexuosum*. Hedw. Sm. Hook. Grev. Purt. also *Bryum flexuosum*. Linn. Huds. Lightf. Dicks. With. to Ed. vii. Turf bogs and wet rocks, on high moors, rare. Pentland Hills. Grev. Edin. High ground in Ragley woods, Warwickshire. Purton. E.) Bogs on Cader Idris, and Snowdon. Dillenius. But I have never found it there in fructification. Mr. Griffith.

S. ARBO'REUM. Branched, creeping; capsules lateral, pointing one way. See *Fontinalis secunda*.

(*S. cuspidatum*. E. Bot. 2392. Branches attenuated; leaves lanceolato-subulate, lax. Musc. Brit. iv. Hooker suspects it may prove only a var. of *S. palustre*. E.)

PHAS'CUM. *Capsule* egg-shaped, furnished with a veil, but without a lid, or only an imperfect one which does not fall off.

(1) *Capsule sessile.*

P. ACAU'LON. (Stemless: leaves egg-shaped, hair-pointed, concave, the upper ones folding over each other: capsule broad-oval. E.)

Schreb. Phasc. 1. 1 *and* 2—*Curt.* 276—(*E. Bot.* 2025—*Musc. Brit.* v. E.)—*Dill.* 32. 11—*Fl. Dan.* 249. 3—*Happ.* ii. *Phasc.* 1. *a.*—*Neck. Meth.* 1. 1, *at p.* 273, *a veil magnified*—*Pet.* i. 95. 14.

A few lines in length, growing in clusters, assuming rather a globular shape from the convergency of the *leaves*, which are rather broad, membranous, concave, soft, nerveless, green, delicate, ending in a short hair which is more conspicuous in the dry plant. *Capsule* little larger than the poppy seed, so concealed within the middlemost leaves as to be more readily felt than seen. Dill. Although there is no proper *lid* to the capsule it opens at the top. The *veils* incline to one side.

(SHARP-LEAVED DWARF EARTH-MOSS. (*P. cuspidatum*. Hedw. Gmel. Sm. Hook. Grev. Purt. E.) Heaths and ditch banks, garden walls, especially in a sandy soil, not uncommon; but on account of its minuteness, and the leaves secreting the capsules, it is generally overlooked.

A. March.

P. MU'TICUM. Stemless: leaves egg-shaped, concave, converging, not terminating in hairs.

Schreb. Phasc. 1. 11 *and* 12—(*E. Bot.* 2027. E.)—*Dill.* 32. 12—*Vaill.* 27. 2.

Whole *plant* smaller than the preceding, capsules rounder and more shining, red yellow; leaves paler, not ending in a grey hair. *Capsules* ripe a month sooner. Dill.

(Beardless Earth-moss. E.) *P. acaulon β.* Linn. Garden walks, hedges, ditch banks. A. Jan.—Feb.

P. subula'tum. Stem short: leaves spear-strap-shaped, upper ones bristle-shaped, broad at the base.

Hedw. Stirp. i. 35—(*Schmid.* 58 1—*Curt.* 275—*E. Bot.* 2177—*Musc. Brit.* v. E.)—*Fl. Dan.* 249. 2—*Happ.* ii. *Phascum.* 1. *b.*—*Dill.* 32. 10—*Vaill.* 29. 9.

Capsules continuing all the summer, reddish and yellowish, in autumn ripening, turning brown, and opening. R. Syn. So minute as hardly to be visible if it did not grow in patches; from two to three lines high. Weis. *Shoots* not branched. *Veil* covering the capsule, conical, scored, blunt, of short duration. Neck. In a rich soil sometimes half an inch high, and with two or three branches towards the top. *Barren flower* in the bosom of the leaves. *Lid* none. Hedw. Only three or four lines high, but growing in patches is readily found, and the *capsules* not larger than a seed of tobacco, are very visible on account of the slenderness of the leaves. Dill. They frequently fall off without opening.

Awl-leaved Earth-moss. Heaths in a sandy soil; ditch banks; not uncommon. A. March—Aug.

P. serra'tum. Shoots thread-like, jointed, branched; leafits of the involucrum spear-shaped, serrated. Dicks.

Dicks. 1. 1—*Schreb.* jn 8. *t.* 2—*E. Bot.* 160—*Musc. Brit.* v. E.)

Extremely minute, at first sight resembling a thread-like *Byssus*, and would scarcely be obvious to the naked eye if it did not grow in patches. It seems a link which connects the *Musci* and the *Algæ*, partaking of *Phascum* and *Conferva*. It consists of numerous green filaments, which through a glass appear creeping, cylindrical, branched, jointed like a *Conferva*, the interstices pellucid, the joints darker green. *Branches* alternate, forked, awl-shaped at the end. *Capsules* egg-shaped, pointed, sessile irregularly on the sides of the shoot near its base: tawny when ripe. It has no *lid* which separates. The *involucrum* consists of three or four spear-shaped leaves, pointed and serrated. Schreber and Weber seem not to have been aware that the jointed shoots belong to the plant. Dicks. (The *veil* is described as small, and of a pale brownish colour. Probably the most diminutive of British Mosses. E.)

(Serrated or Capillary-branched Earth-moss. E.) On the north side of Muswell Hill, near Highgate. Dickson. (Moist banks. Braid Hill marshes. Mr. G. Don. Grev. Edin. E.) April.

(*P. stoloniferum.* Dicks. 7. 2. E. Bot. 2006. and With. to Ed. vii. is now considered a var. of this species; but rather larger, the shoots longer, the space betwixt the joints longer, and the leafits bluntly toothed and reticulated. Growing on clay near Walthamstow. E.)

P. alternifo'lium. Fertile stem short: barren stems taller, upright: leaves alternate, awl-shaped. Dicks.

Dicks. 1. 2—(*E. Bot.* 2107—*Musc. Brit.* v. E.)

Barren and *fertile stems* growing intermixed, and forming small green tufts.

Barren shoots undivided, thread-shaped, fully half an inch high. *Leaves* very short, awl-shaped, alternate, rather bulging at the base, expanding at the ends. *Fertile shoots* undivided, one-eighth of an inch high. *Leaves* awl-bristle-shaped, as long again as the capsule. *Capsule*, one at the end of each shoot, single, sessile, buried in the leaves, inversely egg-shaped, pale yellow. Dicks.

Alternate-leaved Earth-moss. Bogs. Gamlingay Bogs, Cambridgeshire. Mr. Griffith. April.

(2) *Capsule on a fruit-stalk.*

P. curvicol'lum. Stemless: fruit-stalks crooked: leaves spear-shaped, taper-pointed, expanding.

Dicks. 1. 3—*Hedw. Stirp.* i. 11—(*Hook. Fl. Lond.* 54—*Musc. Brit.* v.—*E. Bot.* 905. E.)

Plant extremely minute, hardly visible to the naked eye, unless growing in clusters and bearing its swollen capsules. *Involucrum* leaves straight, strap-spear-shaped; the other leaves egg-spear-shaped. *Fruit-stalks* very much bowed. *Capsules* egg-shaped, brown and mottled when ripe. *Veil* very small. *Lid* with a short beak. Often mixed with *Bryum argenteum.* Ripens in May. Hedw. *Leaves* mid-ribbed, as long as the fruit-stalk.

Crooked-stalked Earth-moss. In barren grassy places near Croydon. Dickson. (On banks near Clapham, Bedfordshire. Near Findon, Sussex; and Beverley, Yorkshire. Bot. Guide. E.)

P. pilif'erum. With a stem: leaves egg-oblong, upright, hair-pointed: (capsule globose, upright. E.)

Schreb. Phasc. 1. 6 *to* 10—(*E. Bot.* 1888. E.)

(This *plant* is remarkable for it hoary appearance occasioned by the long white filiform extremities of the *leaves*, which are generally short and obtuse. E.)

(Bearded Earth-moss. *P. cuspidatum*, var. Musc. Brit. *P. acaulon* of With. April. E.)

P. axilla're. With a stem: capsules not taller than the leaves: leaves awl-shaped, keeled, somewhat fasciculated.

Hedw. Stirp. i. 34—*Dicks.* 1. 3.—(*E. Bot.* 1036—*Musc. Brit.* v. E.)

Exceedingly small; about one-eighth of an inch high, upright, sometimes sending out one or two branches at the base. *Leaves*, slender, bristle-shaped, surrounding the stems and rising above the ends. *Capsules*, egg-shaped, taper-pointed, on short fruit-stalks, sometimes from the sides of the stem and bosom of the leaves, but mostly terminal, solitary, or in pairs, naked or distinct, though the leaves extend beyond them; when ripe brownish. Dicks.

Lateral-fruited Earth-moss. *P. axillare.* Dicks. i. 2. Sm. Hook. Grev. *P. nitidum.* Hedw. With. to Ed. vii. By Hooker identified also with Dickson's *P. strictum*, though somewhat different to the fig. E. Bot. 2093. E.). Bogs on heaths. Sept.

P. rec'tum. Stemless: fruit-stalk thrice the length of the leaves: leaves spear-shaped, mid-ribbed, fine-pointed.

(PLATE XVIII. *f.* 1—*Hook. Fl. Lond.* 54—*E. Bot.* 330—*Musc. Brit.* v. E.)

Differs from *F. curvicollum* in having beardless, though pointed leaves, a longer and nearly upright stalk, and longer-pointed capsule. E. Bot. E.) *Fruit-stalk* and *capsule* a rich chesnut red. *Fruit-stalks* straight, sometimes two from the same root. *Leaves* five or six. Whole plant the twentieth of an inch in height. *Capsule* not wrinkled.

(LONG-STALKED EARTH-MOSS. E.) Specimens from J. W. Griffith, Esq., who found it amongst trees in the front of Garn House, very near the road leading to Henllan. (Frequently found in fields that have lain untilled one or two years, together with *Weissia Starkeana*. Hooker. E.)
April—May.

FONTINA'LIS.* *Capsule* nearly sessile, furnished with a veil, and surrounded by a tiled involucrum.
Barr. Fl. bud-like, axillary; on the same plant.

Obs. Differing from *Hypnum* chiefly in the capsule not being supported on a fruit-stalk. Weis.

F. ANTIPYRE'TICA. Capsules lateral; leaves acute, keeled, doubled together, disposed in three rows.

Dill. 33. 1—(*E. Bot.* 359—*Mus. Brit.* xxii. E.)—*Vaill.* 33. 5—*H. Ox.* xv. 6. 32—*Kniph.* 12—*Buxb.* iii. 69. 2—*Mich.* 59. 9—*Schmid.* 58. 4—*Hedw. Hist.* i. 5. 27. ii. 9. 53. 54. 55. *and* 1. 5.

Shoots a foot long or more, branched. The primary shoot sends out lateral and terminal ones, and these branch out again. Neck. Floating in water. *Leaves* two or three lines long, and half as broad, very entire at the edge. *Capsules* lateral, in the bosom of the leaves, on very short fruit-stalks, inclosed in a leafy scaly involucrum. *Veil* conical. *Lid* conical, blunt, starting with a spring from the ripe capsule. *Fringe* surrounding a central point. *Seeds* green. Dill.

GREATER WATER-MOSS. Upon rocks and roots of trees, in brooks, rivulets, slow streams and ponds. (Delights in the neighbourhood of cataracts, and flourishes most where the stream is most turbulent. Drummond. E.)
P. June—Sept.†

F. MI'NOR. Capsules terminal; leaves egg-shaped, acute, concave; pointing three ways; always in pairs.

(*Hook. Fl. Lond*—*E. Bot.* 557—*Dill.* 33. 2—*Musc. Brit.* xi. E.)

Leaves doubled together and keeled, on the thicker branches in pairs. Linn. *Shoots* four inches long, in rapid streams half a yard or more, very much branched. *Branches* three-sided, ending in a sharp point. *Capsules* egg-shaped, on short fruit-stalks. Web. *Shoots* shorter, more branched, and leaves smaller, thicker, and blunter, than in *F. antipyretica*. Dill.

LESSER WATER-MOSS. (*F. minor*. Linn. *Trichostomum Fontinalioides*.

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* (From its natural station being in fresh springs and rivulets. E.)

† The specific name was given to this plant in allusion to its being employed by the Swedes to fill up the spaces between the chimney and the walls, and thus, by excluding the air, preventing the action of the fire. (The pale reddish tufts of the minute *Conferva nana*, Dillw. 30, may sometimes be observed parasitically attached to this species in alpine rivers. Gray. E.)

Hedw. Sm. *Cinclidotus Fontinaloides.* Hook. E.) Banks of the Thames, on the walls of Lambeth Palace, and on the banks of the Isis at Oxford. Dill. (Water of Leith below Collinton. Mr. G. Don. Grev. Edin. E.) P. Aug.—Oct.

F. SQUAMO'SA. Capsules lateral: leaves tiled; awl-spear-shaped.

Dicks. H. S.—*Hedw. Stirp.* iii. 12—(*E. Bot.* 1861—*Musc. Brit.* xxii. E.)—*Dill.* 33. 3—*J. B.* iii. 778. 3.

Leaves sometimes spear-shaped, pointed. Very nearly allied to *F. antipyretica.* Huds. *Capsules* egg-shaped, sessile. Neck. Long and slender; *fertile* stem generally forked; *barren* stem more branched; four to six inches long. *Leaves* long spear-shaped, partly embracing the stem, so slender as to appear awl-shaped to the naked eye. Hedw. *Shoot* four to twelve inches long, branched, floating in the direction of the stream, slender, black, bare near the root. *Leaves* dark green, smooth, shining, black when dry. *Branches* three-sided. *Capsules* on the side of the branches sessile, egg-shaped, immersed in a leafy involucrum. Dill. The lower parts of the *stems* losing their leaves resemble horse-hairs matted together. Stackh. *Capsules* usually produced on the shoots of the preceding year, or on the still older branches: never on the young shoots. Griff.

(Greville observes, "one of the most striking characters is the glistening or shining appearance, which is so evident, especially when dried, that Bauhin applies to it to the epithet *lucens.*" E.)

SCALY WATER-MOSS. Mountain rivulets in Wales, the north of England and Scotland. In the rivulet by the old castle, near Llanberris. Mr. Griffith. Rivulets near Penzance. Mr. Stackhouse. (Water of Leith, near Redhall. Dr. Greville. E.) P. June—Oct.

F. PENNA'TA. Capsules lateral: leaves pointing two ways; expanding.

Hedw. Stirp. iii. 19—(*Grev. Scot. Crypt.* 109—*Musc. Brit. Sup.* iv. E.)—*Vaill.* 27. 4—*Hal. Enum.* 3. 2, *at p.* 109, *Hist.* 46. 2, *at* iii. *p.* 56—*Dill.* 32. 9—*Schmid.* 58. 2.

Leaves with wavy wrinkles. *Capsules* sessile; nearly cylindrical. Neck. *Shoots* creeping and forming compact patches. *Branches* one inch long or more. *Leaves* closely compacted, about a line in length, and one fourth of a line in breadth. *Capsules* solitary or in pairs, chiefly on one side the branches, one line long and half as broad, smooth, green, changing to reddish. *Mouth* without a ring, closed with a white fringe. *Lid* pointed. *Veil* but half the size of the capsule; smooth. *Involucrum* composed of spear-shaped, pointed, shining leafits, taller than the capsule and closely embracing it. Pol. *Stem* thread-shaped, rigid; branches in opposite directions, decumbent with age. *Leaves* without veins.

FEATHERED WATER-MOSS. *Neckera pennata.* Hedw. *Hypnum pennatum.* Gmel. Trunks of trees, rare. (Beech tree at Fotheringham, near Forfar. Mr. Drummond. Musc. Brit. E.) A. Aug.—Oct.

F. CAPILLA'CEA. Capsules axillary: leaves strap-bristle-shaped, pointing one way; those of the receptacle very long, convoluted, awl-shaped. Dicks. ii. 1.

(*E. Bot.* 2432—*Musc. Brit.* xxii. E.)—*Dill.* 33. 5.

Shoots five to seven inches long. *Branches* sometimes divided. *Involucrum* long, from the bosom of the leaves, chiefly where branches arise; out of these come forth *Capsules* green, small, egg-shaped. Dill.

HAIR-LIKE WATER-MOSS. Mountain rivulets in Scotland.

F. ALPI'NA. Capsules lateral: leaves mostly pointing one way, elliptical, bluntish, those of the involucrum spear-shaped, pointed. Dicks. ii. 2.

Dicks. ii. 4. 1.

Leaves short, twisted when dry, somewhat curled. *Capsule*, together with the involucrum, thrice as large as the leaves. Dicks. (*Fringe* simple, its fibres twisted. Br. *Fruit-stalk* nearly as long as the capsule. *Foliage* black when dried. E.)

ALPINE WATER-MOSS. On rocks and stones in the alpine rivulets of Scotland. On stones in Balalake, and rivulets about Llanberris, also in many small rivulets about Garn, Denbighshire; river Clwyd not ten yards above high water mark, in plenty: so that it is not exclusively alpine. Mr. Griffith. (On large stones on the side of Loch Tay which are occasionally under water. Mr. Brown. Aug. E.)

F. SECUN'DA. Branched, creeping: capsules leaning one way: leaves egg-shaped, taper-pointed, tiled.

Hedw. Stirp. 3. 15—(*E. Bot.* 1180—*Musc. Brit.* xxii. E.)—*Dill.* 32. 6—*Vaill.* 27. 17.

Deep green. *Branches* sometimes subdivided. *Leaves* short, numerous, triangular, concave. *Capsules* oblong, on very short fruit-stalks, on every part of the stem, pointing one way, nearly enclosed by an involucrum of narrow leafits, ending in hairs, very numerous. *Lid* spit-pointed, brown. Dill. An inch high, stiff, but not upright, more or less branched at the base.

(LATERAL WATER-MOSS. E.) *Neckera heteromalla*. Hedw. *Hypnum heteromallum*. Gmel. *Sphagnum arboreum*. Huds. (*Phascum repens*. With. to Ed. vii. *Daltonia heteromalla*. Musc. Brit. E.) On trees in orchards. (On apple trees in Cornwall. Mr. Stackhouse. On the root of a tree in a thicket at Alcester mill, Warwickshire. Purton. Trees near Forfar. Hooker. E.) P. Dec.—Feb.

BUXBAU'MIA.* *Capsule* on a fruit-stalk: *outer fringe* with sixteen teeth; *inner* membranous, plaited.
Barr. Fl. bud circular.

B. FOLIO'SA. Stemless: capsules nearly sessile, surrounded with leaves.

Dicks. H. S.—(*Hook. Fl. Lond.*—*E. Bot.* 329—*Musc. Brit.* viii. E.)—*Schmid. Buxb.* 2, *lower part of the plate, consisting of the figures distinguished by Roman numerals*—*Hal. Enum.* 3. 3, *at p.* 109; *Hist.* 46. 3, *at* iii. *p.* 56—*Dill.* 32. 13—*Fl. Dan.* 249. 1—*Happ.* ii. *Phascum* 1, *the central plant*—*Hal. It. Helv.* 2. 8, *in Opusc. p.* 308.

Leaves of the involucrum awned. Willd. *Leaves*, the lowermost open, oblong, the uppermost upright, spear-shaped, taper-pointed. *Capsule* sessile. Huds. 466.

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* (Named by Linnæus in honour of Dr. BUXBAUM, a German, author of "an Enumeration of the Plants around Hal," and other works. E.)

(Leafy Buxbaumia. E.) *Phascum montanum.* Huds. *P. maximum.* Lightf. (*Diphyscium foliosum.* Mohr. Hook. E.) On Hartfell mountain near Moffat. Sheffield in Huds. Cwn Cennog Rocks, also about Craig du, by the road side near Llanberris. Mr. Griffith. (By the road side on the mountains between Patterdale and Ambleside. Dr. Hooker. On Bridge Rocks, and the lower part of Harrison's Rocks, near Tunbridge Wells. Mr. Forster. E.)

A. Sept.—Oct. Dill.—May—Aug. Huds.

(B. aphyl'la. Stem none: base bulbous, surrounded with minute scales.

Hook. Fl. Lond.—*E. Bot.* 1596—*Musc. Brit.* xxii.

Hooker observes: "This most singular of Mosses can scarcely be said to have any *stems*. All that might be so called, (or perhaps more strictly a *perichætium*) resembles a small bulb covered with hair-like processes, but which, when highly magnified, are found to be true *leaves*, membranous, reticulated, laciniated, and so narrow and minute, that they were either entirely overlooked or described only as hairs till lately. Whole *plant* not an inch high, of a red colour when quite ripe. *Theca* large, ovate, oblique, gibbous, flattish above, convex beneath. *Lid* conical, obtuse.

Leafless Buxbaumia. On the ground. Rare. In a Fir wood at Sprowston, near Norwich. Among Fir trees below Roslin Chapel. Mr. E. Maughan. Georgetown Hill, near Kinross. Mr. Arnott. E.)

SPLACH'NUM.* *Capsule* cylindrical, veil and receptacle very large: *fringe* with eight teeth.
Barr. Fl. a bud on a different plant: circular, terminal.

S. sphæ'ricum. Receptacle globular: leaves spoon-shaped but tapering to a slender point.

Hedw. Stirp. ii. 16—(*Musc. Brit.* ix.—*E. Bot.* 785. E.)

Fruit-stalk very long, greenish and reddish brown. *Capsule* very small. *Lid* blunt. *Receptacle* green. Linn. *Stem* upright, hardly one inch high, seldom branched. *Leaves* distant, alternate, spoon-shaped, but tapering to a point. *Fruit-stalk* very long, (three or four inches) upright, terminal, tawny at bottom, green above. *Receptacle* large, globular, green. *Capsule* cylindrical, blunt. *Lid* blunt. *Fringe* eight pair of teeth, yellowish. Hedw. *Fruit-stalks* sometimes four or five inches high.

(Green Globular Gland-moss. On the ejesta of animals, in mountainous countries frequent. E.)

(Under *S. sphæricum* Messrs. Hooker and Taylor comprehend *S. gracile.* Dicks.; *S. ovatum.* Hewd.; and *S. rugosum.* Dicks. E.)

S. vasculo'sum. Receptacle nearly globular: leaves battledore-shaped, distant.

(*Grev. Scot. Crypt.* 179—*Musc. Brit. Sup.* i. E.)—*Hedw. Stirp.* ii. 15.

Barren stems two inches, *fertile* ones one inch long, upright, unbranched.

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* (A name adopted by Linnæus from Dioscorides, whose *σπλαχνον* is synonymous with his *βρυον*, (Bryum,) and belongs to Mosses in general, or rather perhaps to Lichens, growing upon trees. E.)

Leaves spatula-shaped, bluntish, alternate, distant. *Fruit-stalk* one and a half inch high, upright, red. *Receptacle* large, spear-shaped, blood red. *Capsule* cylindrical, upright, brownish yellow. *Fringe* simple, composed of eight teeth, in pairs. Hedw. (This is perhaps the finest and most beautiful of all the British Mosses. We have seen it covering a spot of ground many feet in diameter with its brilliant green foliage, and spotted with its large, deep rich brown, shining capsules. Hook. E.)

(BLOOD-COLOURED or OBTUSE-LEAVED GLAND-MOSS. E.) *Phascum pedunculatum.* Huds. Ed. i. adopted by Linnæus. (Smith associates this plant with *S. gracile.* E.) Upon bogs, and on the points of rocks on the tops of the Highland mountains, as Ben Lomond, and in the Isle of Skye and elsewhere. Lightfoot. 697. On Scarbrae Moss in the parish of Kirkmichael. Dr. Burgess. On mountainous moist heaths in Yorkshire, Westmoreland, and Wales. (Whether the plants of Hedwig and Hudson be the same, may be questionable; but Dr. Greville appears to have found the former in similar situations, and in extended patches, as on Ben Lawers, and the Clova mountains. E.) A. June—Oct. Huds.—P. Hedw.

Var. *Acutifolia* of that author, "distinguished by much shorter stems, a dingy, almost black colour, and, above all, by the acute termination of the leaves," is represented in the same work, Pl. 311. E.)

S. AMPULLA'CEUM. Receptacle inversely bottle-shaped: leaves spear-shaped, acute, generally serrated.

E. Bot. 144—*Hedw. Stirp.* ii. 14—(*Musc. Brit.* ix. E.)—*Fl. Dan.* 822—*Dill.* 44. 3—*Vaill.* 26. 4—*H. Ox.* xv. 6. 10—*Buxb.* ii. 1. 1.

Receptacle empty, transparent, an extension of the fruit-stalk. Linn. *Stem* single or forked, from one to two inches high, upright, but feeble, and supported by other collateral stems. *Leaves* spear-shaped, acutely pointed. *Stamens* and pistils on the end of the same shoot. *Veil* bell-shaped. *Capsule* slender, cylindrical, upright. *Receptacle* large, shaped like an inverted decanter. *Lid* convex. *Fringe* single, of eight pair of teeth. Hedw. *Fruit-stalks* crimson, one to three inches long. *Veil* very small, deciduous. (One of the finest of *Splachna.* Grev. E.)

PURPLE BOTTLE or GLAND-MOSS. Bogs and marshes, and often upon cow-dung. Bogs about Hitchin Ferry near Southampton, and by W. Wickham, and Addington near Croydon. Ray Syn. Geldestone Fen, near Bungay, Suffolk. Mr. Stone. (In a turbary north of Tyfry, between that and Hendref, Anglesey; a spot which Mr. Davies indicates as well worthy the inspection of the Botanist in each season of the year. At Preswick Carr, Northumberland; and on the Durham moors. Mr. Winch. E.) According to Hedwig, P., and ripening its capsules in July.
A. March—May.

(Messrs. Turner and Hooker concur in opinion that Dickson's *S. Turnerianum,* E. Bot. 1116, (*S. sagittifolium,* With.) is only a var. of *S. ampullaceum.* The whole plant is smaller, and the apophysis of the capsule narrower than in the common appearance. E.)

S. ANGUSTA'TUM. Receptacle egg-shaped: fruit-stalk very short: leaves serrated upwards, hair-pointed.

Hedw. Stirp. ii. 12—(*E. Bot.* 1132—*Musc. Brit.* ix. E.)

Upright, not branched, nearly one inch high. *Leaves* larger towards the top of the plant, sometimes a little toothed towards the end. *Fruit-stalk* hardly rising above the leafy involucrum. *Capsule* cone-shaped, but lopped, leaning a little. *Mouth* fringed with eight pairs of teeth. *Veil* oblique. Hedw.

(NARROW-LEAVED GLAND-MOSS. E.) In moist alpine situations in Scotland. Dicks. ii. 3. (On the side of Lochawe, Scotland. Mr. Don. E.) P.

S. OVA'TUM. Receptacle inversely egg-shaped: leaves egg-spear-shaped: stem none.

(*Hedw.* 8. 4. 6—*E. Bot.* 1590. E.)—*Dill.* 44. 4—*Ray.* 3. 2, *at p.* 128.

Leaves broad, shining. *Fruit-stalk* golden yellow. Dill. A different plant from the *S. vasculosum.* Linn. to which Hudson improperly referred it. Dicks. II. 2.

(OVATE GLAND-MOSS. E.) Rotten spongy ground, as in the pastures called Emott Moor, Lancashire. Also in Montgomeryshire. Dill. On Ben Nevis. Dickson.

S. MNIOI'DES. Receptacle inversely conical: capsule egg-cylindrical: leaves spear-shaped, very entire, ending in a long taper point.

Hedw. Stirp. ii. 11—(*Musc. Brit.* ix. E.)—*Fl. Dan.* 192.

Fertile shoots upright, undivided. *Barren* shoot generally branched. *Leaves* very entire, ending in a long point. *Fruit-stalk* upright, terminal, about half an inch long. *Capsule* upright, egg-shaped. *Receptacle* an inverted cone. *Lid* flat, bluntly pointed. *Fringe* eight pair of teeth, broad, united. *Veil* slender. Hedw. In the star-bearing shoots the edges of the leaves are sometimes set with hairs. Griff. The capsule is larger than the inversely conical receptacle, but in *S. Breweri* the receptacle is egg-shaped and larger than the cylindrical *capsule.* In both, the *leaves* are with or without hair-like points, but in *S. Breweri* the leaves are narrower and the points longer.

(GREEN TAPERING GLAND-MOSS. E.) Mountainous places. Dicks. I. 2. Near Llyn Idwell, Carnarvonshire. It frequently occurs upon the ejesta of foxes and badgers, which are very numerous about Snowdon. Mr. Griffith. P.

(Drs. Hooker and Taylor comprehend under the present species,

a. Minus, of a deeper colour and with shorter stems. *S. Mnioides.* Linn. Hedw. E. Bot. 1539. *S. urceolatum.* Dicks. E. Bot. 2417.

β. Majus, of a paler colour, and with elongated stems. *S. fastigiatum.* Dicks. E. Bot. 786. *S. purpureum.* With. *S. Brewerianum.* Hedw. ii 38. Dill. 44. 5. E.)

S. TEN'UE. Capsules inversely conical: leaves egg-oblong, serrulated upwards, awn-pointed.

PLATE XVIII. *f.* 3—*Dicks.* 4. 2—(*E. Bot.* 1133—*Musc. Brit.* ix. E.)

Fertile shoots half an inch high. *Leaves* concave, inversely egg-shaped, entire, bordered, reticulated, the meshes confluent, keel curved, serrulated, ending abruptly in a serrulated awn-like point. *Fruit-stalks* one to one and a half inch high, the lower half bright pink, the upper half and the capsule dark purple. *Capsule* a continuation of the fruit-stalk, inversely conical, a little leaning to one side; teeth sixteen, in pairs. *Veil* extinguisher-shaped, but blunt, as if lopped. *Barren* shoots terminated by rosaceous cups; all the leaves spear-shaped, serrulated, ending in fine points; the sides approaching. Griff. (Approaches very near to *S. urceolatum,* from which it differs in the habit of its leaves, its slender and almost cylindrical receptacle. Dicks.

SLENDER GLAND-MOSS. Smith was of opinion that *S. purpureum,* With. Ed. iii. belonged to this species; but Hooker decidedly refers it to *S. Mnioides.* On Ben Lawers in the Highlands. On cow-dung about Llyn Idwell. Mr. Griffith. E.) P. June—July.

(S. LINGULA'TUM. Leaves lingulate, rounded at the top, their nerve disappearing below the summit: capsule obovate: apophysis obconical: lid convex, acuminulate.

Hook. Fl. Lond. 192—*Musc. Brit.* xiv. (*except peristome;*)—*Dicks. Crypt. t.* 10, *f.* 6—*E. Bot.* 2095.

Mr. Arnott observes that this plant has each of the sixteen teeth geminate; a character which connects it with the genus *Splachnum,* and which is not to be found in any other *Weissia.* Its *columella* is also that of a *Splachnum.* But Prof. Hooker states that there are sixteen distinct equidistant teeth; each, indeed, having an evident line, and even a slight furrow down the centre, but it is never split nor perforated. *Stems* two to four inches and more in length; below generally decumbent, (from the usual current of water,) and simple, with numerous downy radicles, blackish; above erect, branched, deep green. *Leaves* deeply imbricated, erecto-patent, oblongo-lingulate, very obtuse, entire, somewhat undulated, reticulated with oblong *areolæ,* furnished with a nerve of the same colour which disappears below the apex; the lower ones, as if from decay, of a blackish brown colour; uppermost ones deep green. *Fruit-stalk* flexuose, deep red.

TONGUE-LEAVED GLAND-MOSS. *S. lingulatum.* Dicks. Sm. Brid. *Weissia Splachnoides.* Hook. Tayl. This Moss has attracted much attention, both from its rarity, and the difficulty in determining its genus. It was first discovered in Scotland by Mr. Dickson: has since been found on Ben Lawers by Mr. G. Don; on Ben Lomond by Mr. D. Don; and by Prof. Hooker in muddy declivities, in profusion at the foot of Ben Cruachan, between Craigalleach and Meal-greadha, in Aug. affording a spectacle such as few Muscologists have had the opportunity of witnessing. E.)

S. FRŒLICHIA'NUM. Capsule a club-shaped termination of the fruit-stalk: leaves battledore-shaped.

Hedw. Stirp. iii. 40.

Leaves folded when dry; with much moisture they lose their colour at the edges, thence attaining a membranous appearance. The nerve or keel does not extend to the extremity of the leaves *Fruit-stalks* pale upwards, of a fine pink colour near the base. *Capsule* a continuation of the fruit-stalk, inversely egg-shaped. I have not observed any teeth. Griff. *Plant* about an inch high. *Leaves* of a beautiful green, broadest at the end; mid-rib indistinct, hardly discernible in the lower leaves. *Fruit-stalks* half an inch long. *Receptacle* very short, and only to be distinguished from the fruit-stalk and capsule when the latter is ripe. Hedwig says the mouth of the capsule has eight pair of teeth, which always stand upright and never expand, as in the other species.

(FRŒLICHIAN GLAND-MOSS. E.) Specimens sent me by J. W. Griffith, Esq. who first discovered it growing on the eastern side of Snowdon, about one hundred and fifty yards from the summit. P. Autumn.

POLYTRICHUM.* *Capsule* with a veil: outer fringe with thirty-two, (or sixty-four incurved teeth; inner, a flat undivided membrane. E.)†.

Barr. Fl. a circular bud, on a different plant: terminal.

P. COMMU'NE. Stem simple, proliferous: leaves strap-spear-shaped, serrulated: capsules oblong, four-sided: veils woolly.

(*E. Bot.* 1197—*Musc. Brit.* x.—*Schmid.* 59. E.)—*Dill.* 54. 1—*Happ.* i. *Polytrich.* 1—*Mich.* 59. 1. *I, E, M, O, P, Q, R.*—*Blackw.* 375—*Vaill.* 23. 8—*Ger.* 1371. 3—*Gars.* 129—*Fuchs.* 629. 1—*Trag.* 528. 1—*J. B.* iii. 760. 1—*Lon.* i. 222. 3—*Dod.* 475. 2—*Ger. Em.* 1559, *right hand fig. of the 3 lowermost*—*Barr.* 251. 3—*Kniph.* 12—*Trag.* 946, *the tallest of the figures, rising from a bed of Hypnum sericeum.*—*Park.* 1052, *right hand fig. of the two uppermost*—*Lob. Obs.* 645. 2. *Ic.* ii. 245—*Ger. Em.* 1559. 2—*Ger.* 1370. 2—*Park.* 1307. 3.

Stems several inches high, seldom branched. *Leaves* near half an inch long, slender, pointed, turning back, finely serrated. *Fruit-stalks* terminal, solitary, two to four inches long, surrounded by an involucrum at the base. *Capsule* four-sided; mouth fringed. *Veil* very hairy, hanging down below the capsule, ragged. Weis. From four to twelve inches high, stiff, straight. *Fruit-stalk* golden red. *Veil* tawny. Dill.

(COMMON HAIR-MOSS. E.) GREAT GOLDEN MAIDENHAIR, or GOLDILOCKS. Woods and moors in wet boggy places. P. May—June.‡

(This very fine Moss appears to be subject to considerable variation. In Musc. Brit. under var. *Attenuatum*, " stems three or four inches in height;

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* (From πολυς, many; and τριχος, hairs; alluding to the hairiness of the veil, or, as some have imagined, to the setaceous supporters of the capsules. E.)

† (Greville observes that " the membrane which closes the mouth of *Polytrichum* is not merely stretched across it, but passes to the base of the outer teeth, and lines them to the very apex, and thus forms a real membranaceous inner peristome. In *P. alpinum* the above structure is extremely evident."

‡ (" Never was the bountiful provision of Nature more wonderfully evinced, than in furnishing mankind with bed and bedding in the savage wilderness of Lyckselle Lapland. The Great Hair-moss, called by the Laplanders *Romsi*, grows luxuriantly in their damp forests, and is used for this purpose. They choose the starry-headed plants, out of the tufts of which they cut a surface as large as they please, for a bed and bolster; separating it from the earth beneath: and although the shoots are scarcely branched, they are nevertheless so much entangled at the roots, as not to be separated from each other. This mossy covering is very soft and elastic, not growing hard by pressure; and if a similar portion of it be made to serve for a coverlet, nothing can be more warm and comfortable. If it becomes too dry and compressed, its former elasticity is restored by a little moisture. Nature, in providing for the wants of man, has not forgotten to defend the capsule of the Hair-moss from the injury of the weather. It is covered with an umbrella, in the form of a cone, which, as the seeds begin to ripen, loosens from the capsule to which it had before adhered, and at length falls off. The stem which supports the seed-vessel previously recovers its position, and turning the capsule towards the earth, completely empties the seeds as from a pitcher." Wonders of Veg. Kingdom, p. 164. Bears also collect this useful little plant for like purposes, and birds line their nests with it.—" In Hampshire," says Mr. White, " our foresters make little neat besoms from the stalks, which they call *silk-wood.* When this Moss is well combed and dressed, and divested of its outer skin, it becomes of a beautiful bright-chesnut colour; and being soft and pliant, is very proper for the dusting of beds, curtains, carpets, hangings, &c. These pretty implements of housewifery are worthy the attention of the brushmakers in town." E.)

leaves shorter, their margins pellucid; capsule obtusely quadrangular; apophysis indistinct;" is included *P. attenuatum*, E. Bot. 1198, and *P. gracile*, E. B. 1827. E.)

Var. 2. Leaves shorter and less flexible. Dill.

(*Musc. Brit.* x.—*E. Bot.* 1200. E.)—*Dill.* 54. 2—*Vaill.* 23. 6—*Fl. Dan.* 295—*H. Ox.* xv. 7. 6 *and* 8—*Lob. Ic.* ii. 243. 1—*Ger. Em.* 1563. 14—*Park.* 1308. 9.

Whole *plant* smaller than the preceding, except the *veil*, which is larger and more pyramidal. *Stem* seldom more than one inch high, seldom branched. Dill. *Fertile plant* with one single tuft of leaves at the top of the stem, the lower part of which is naked. *Receptacle* orbicular. *Veil* single. *Lid* acutely conical, hanging over the capsule. *Barren*, about an inch of the stem covered with leaves, and supporting at its top a tiled receptacle, in the hollow of which are the filiform barren organs. Stackh.

(*P. Juniperinum.* Willd. Sm. Hook. We can perceive no other difference between *P. strictum*, E. Bot. 2435, and *P. Juniperinum*, than that the former is branched, while the stems of the latter are undivided, and we therefore cordially assent to the opinion of Mr. Turner, who considers them as the same species. Musc. Brit. E.)

On hills, dry or wet. P. May—June.

Var. 3. Linn. Leaves terminating in hairs.

(*Musc. Brit.* x.—*E. Bot.* 1199. E.)—*Rupp.* i. *Polytr.* 2—*Dill.* 54. 3—*Vaill.* 23. 7—*Buxb.* i. 62. 3, *a barren plant.*

Stems not more than half an inch long, simple, leafless below. *Leaves* entire at the edges, ending in grey hairs. *Fruit-stalks* terminal, about one inch long. Weis. *Leaves* bent inwards a little, not serrated, terminating abruptly in a long whitish hair. *Fruit-stalks* and their sheathing involucrums purple. Dill. *Barren* and *fertile* plants in distinct patches.

(*P. piliferum.* Schreb. Sm. Hook. Purt. E.)

Dry woods and sandy barren heaths. Spring.

P. SUBROTUN'DUM. Shoots simple: leaves strap-spear-shaped, indistinctly serrated upwards: capsules roundish.

Hedw. Stirp. i. 13—*Curt.* 102—(*E. Bot.* 1624. E.)—*Dill.* 55. 6—*H. Ox.* xv. 7, *row* 2. 7—*Pet. Mus. f.* 22—*Vaill.* 26. 15, *veil wanting.*

Veil open, larger than the capsule. Linn. *Leaves* obscurely serrated. *Capsules* roundish, pendent. Hedw. *Leaves* somewhat slightly serrated towards the point. *Capsules* nearly as broad as they are long.

(DWARF ROUND-HEADED HAIR-MOSS. E.) *Mnium Polytrichoides.* Linn. *P. Polytrichoides.* Huds. 470. *P. nanum.* Hedw. Heaths. Muddy soil and moist banks. P. May.

(The authors of Musc. Brit. concur in uniting *P. nanum*, xi. E. Bot. 1625, with the present species. E.)

P. ALOI'DES. Shoots simple: leaves spear-shaped, rigid, serrated at the end: capsules cylindrical, oblique: veil woolly.

Hedw. Stirp. i. 14—(*E. Bot* 1649—*Musc. Brit.* xi. E.)—*Dill.* 55. 7—*Buxb.* i. 63. 1—*Vaill.* 29. 11.

Stem near half an inch high, seldom branched. *Fruit-stalks* growing to the length of an inch, fixed rather below the top of the stem. *Capsule* cylindrical, upright, but leaning as it becomes older. *Veil* larger than the capsule. Weis. *Leaves* awl-shaped, serrated, opake, reddish near the point, with an appendage somewhat broader than themselves. *Capsule* contracted beneath the rim, tapering at the base. Griff. *Leaves* serrulated at the ends and also on the back of the mid-rib. *Capsules* twice as long as broad.

(DWARF LONG-HEADED HAIR-MOSS. E.) *P. nanum.* Huds. 470. *P. Aloides.* Hedw. Heaths. Moist banks and muddy soil. P. March—July.

Var. 3. Leaves strap-shaped, serrated, pellucid, with an appendage of the same width; capsules roundish, not tapering at the bottom. Fertile plants grey green. Barren darker-coloured; they grow in distinct patches. Leaves hair-pointed. Fruit-stalk and veil orange-coloured. Barren flowers tiled, cup-shaped, sessile, terminal, red. Stackh.

Ditch banks and road sides about Henllan, Denbighshire. Mr. Griffith. Hills in Cornwall, common. Mr. Stackhouse. Spring.

(Hooker and Taylor include under this species, as var. *a. major.* "fruitstalks two inches long; stems usually simple:" *P. rubellum,* E. Bot. 1939; also as var. *β.* "fruitstalks very short; stems branched with innovations;" *P. Dicksoni,* E. Bot. 1605. E.)

P. HERCY'NICUM. Shoots rarely branched: leaves spear-shaped, fleshy: capsules urn-shaped, upright: veils with scattered hairs.

Hedw. Stirp. i. 15—(*Musc. Brit.* x.—*E. Bot.* 1219. E.)

Stem upright, undivided, one inch long. *Leaves* strap-shaped, keeled, very entire, bowed in, alternate, nearly upright, pointed, naked. *Fruit-stalk* terminal, solitary, upright, an inch long. *Veil* conical, pointed, pale. *Capsule* upright, oblong or cylindrical, the mouth between toothed and fringed. *Lid* conical, somewhat pointed. Huds. *Mouth* fringed with thirty-two short teeth, connected at the base. Hedw. *Stars* or male buds formed of five spoon-shaped pointed leaves. Griff. (*Root* densely woolly. E. Bot. E.) *Capsule* urn-cylindrical, rather narrower in the middle.

(INCURVED HAIR-MOSS. E.) *Bryum incurvum.* Huds. On the mountains of Scotland and Wales. P. June—Oct.

P. ALPI'NUM. Shoots very much branched: leaves spear-shaped, toothed: fruit-stalks terminal: capsules egg-shaped.

(*Musc. Brit.* xi.—*E. Bot.* 1905. E.)—*Dill.* 55. 4—*Hal. Enum.* 3. 6, *at p.* 109—*Hist.* 46. 6, *at* iii. *p.* 56—*Fl. Dan.* 296.

Shoots from half to two inches long; very much branched. *Leaves* slightly toothed. *Capsules* egg-shaped, leaning when ripe. *Lid* conical, beaked. *Mouth* with a ring; fringe fine, short, upright, white. Web. *Capsule* unequally distended, green, blackish when old. *Lid* saffron colour, its point white. Dill. From two to three inches high. (The narrow *leaves* will distinguish this species from *P. urnigerum,* as the branched and somewhat fastigiate *stems* will from *P. commune.* Musc. Brit. E.)

(ALPINE HAIR-MOSS. E.) Mountainous heaths in the north of England, and mountains of Wales and Scotland. P. June—Aug.

β. Huds. *P. urnigerum,* which see.

P. URNI'GERUM. Shoots very much branched: leaves spear-shaped, tooth-serrated: fruit-stalks axillary: capsules cylindrical.

(*E. Bot.* 1218—*Musc. Brit.* xi. E.)—*Dill.* 55. 5—*Vaill.* 28. 13—*Fl. Dan.* 297.

Two or three inches high; with lateral branches somewhat forked, rising to nearly an equal height. *Fruit-stalks* lateral, two or three inches high. *Involucrum* red. *Capsule* cylindrical, egg-shaped, tawny, upright, leaning as it ripens. *Lid* yellow, beak white. *Mouth* with a ring, and covered by a white membrane. *Receptacle* none. *Barren shoots* unbranched, two inches high, stellated at the ends. Leers. Beak of the lid very slender. Grif. (*Leaves* of a singularly glaucous green hue, (reddish only through age,) by which it may be distinguished at first sight. Musc. Brit. E.)

(Urn-bearing Hair-moss. E.) At the foot of Cader Idris. Dillenius. At Roslin, Rivelstone, and other places near Edinburgh. Frequent by road sides in the north of Ireland; also in the Highlands of Scotland. Mr. Brown. (On Gateshead Fell, near Newcastle. Mr. Winch. E.) Near the road side between Denbigh and Voylas, by the rivulet before you arrive at a place called Pennsylvania; and on Cader Idris, with the shoots hardly half an inch high, fruit-stalk as tall as usual. Mr. Griffith.

P. June—Aug.

(P. septentriona'le. Leaves linear-subolate, obtuse, their margins, especially towards the top, involute, subserrulate: capsule ovate, subangulate, furnished with a minute apophysis: lid conical, acuminate.

Musc. Brit. x.—*Hedw.* 22—*E. Bot.* 1906.

Remarkable in the form of its *leaves*, which are very obtuse, curled when dry, so convex behind as to be semi-cylindrical.

Northern Hair-moss. *P. septentrionale.* Sw. Hook. Menz. *P. sexangulare.* Sm. Brid. *P. Norvegicum.* Hedw. *P. crassisetum.* De Cand. Discovered on Ben Nevis, by Messrs. Turner and Hooker, in 1808. In fruit on Brae Reach, and Ben-y-Mach Duich, the highest of the Cairngorum range of Grampian mountains. Musc. Brit. E.)

MNI'UM.* *Capsule* with a veil: *Fringe* with sixteen teeth, sometimes, though rarely, with four.
Barr. Fl. *Bud* circular, rarely knob-like, mostly on a separate plant.

(1) *Capsules upright, cylindrical.*

M. acicula're. Capsules slender: lid needle-like: leaves spear-shaped, upright, mostly pointing one way.

Dicks. H. S.—*Hedw. Stirp.* iii. 33—(*Musc. Brit.* xix.—*E. Bot.* 1978. E.)—*Dill.* 46. 25.

One inch or one inch and a half high. *Branches* upright. *Leaves* crowded. *Fruit-stalks* near an inch high, dark red; on the ends of the younger branches. Dill. *Leaves* spear-shaped. *Fruit-stalks* not half an inch higher than the tops of the shoots.

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* (Adopted by Dillenius from the Greeks, whose μνιον is supposed to be synonymous with Moss. E.)

(DARK MOUNTAIN FRINGE-MOSS. E.) *Bryum aciculare*. Linn. *Dicranum aciculare*. Hedw. Sm. Hook. *Trichostomum aciculare*. Schwaeg. Hook. Drum. Hobs. On stones thinly covered with mould near Llanberris, Carnarvonshire; and in the West Riding of Yorkshire. Dillenius. In the Highlands and Lowlands frequent. Lightfoot. Rocks on the side of the hill about fifty yards above Garthmeilio, the seat of R. W. Wynne, Esq. Denbighshire. Mr. Griffith. P. May—Oct.

Var. 2. Stems trailing; leaves somewhat open. Huds.

Fl. Dan. 1001—*Dill.* 46. 26—*Hal. It. Herc. in Opusc. p.* 152, *f.* 1 *and* 2, *Bryum, &c.*—*Vaill.* 27. 16—*Pet. Mus. Cent.* i. *t.* 1, *f.* 74—*H. Ox.* xv. 5, *row* 4. 29.

Shoots branched, floating in the water or resting on stones. *Leaves* brown green. *Fruit-stalks* short and blackish. *Capsules* oblong, straight, dark green. *Veil* black. Dill.

On large stones that lie in the rivulets in the moors of the Peak of Derbyshire, Petiver; and in the mountain torrents near Llanberris, Carnarvonshire. Dillenius. In the first brook after crossing Pont y Alwen, between Denbigh and Cerrig y Druidion. Mr. Griffith. P. Aug.

Var. 3. Shoots slenderer, upright; leaves pointing one way.

Like var. 2, but shorter, less branched, more upright, and of a yellower green. Griff. Grows with var. 1.

M. PELLU'CIDUM. Stem simple: leaves egg-shaped.

(*Hook. Fl. Lond.* 90—*Musc. Brit.* viii.—*E. Bot.* 1020. E.)—*Schmid.* 3—*Fl. Dan.* 300—*Dill.* 31. 2—*Hal. Enum.* 4. 8, *at p.* 118; *Hist.* 45. 8, *at* iii. *p.* 41—*Vaill.* 24. 7.

Shoots an inch long, seldom branched. *Leaves* in four rows: mid-rib purple, ending in a point. *Fruit-stalks* terminal, an inch long, pelucid, whitish. *Capsules* cylindrical, yellowish. *Veil* very long. Weis, (torn at the base, orange-coloured at the tip. *Lid* conical, reddish, thin. *Teeth* four, shining brown, erect, pyramidal, all separate from top to bottom. E. Bot. Even to the naked eye the size of the teeth is very remarkable, and the gemmiferous cups, unlike anything we know in other Mosses, form at once a striking character. Hook. E.)

FOUR-TOOTHED FRINGE-MOSS. E.) *Tetraphis pellucida*. Hedw. (Sm. Hook. E.) Woods; moist shady places and decayed roots of trees. (In the woody glens of Devonshire abundant; also in Wales and Scotland. Hooker. E.) A. Jan.—July.

Var. 2. Leaves exceedingly narrow, and pellucid.

R. Syn. p. 78. *n.* 5—*Dill.* 31. 2. *E. F.*

Heaths near Woolwich. Mar. R. Syn.

M. SCOPA'RIUM. Shoots branched: leaves strap-spear-shaped, bent back, pointing one way.

Dicks. H. S.—(*E. Bot.* 354—*Musc. Brit.* xviii. E.)—*Dill.* 46. 16—*Curt.*—*Vaill.* 28. 12—*Kniph.* 6. *Buxb.* ii. 4. 1—*Fl. Dan.* 824. 1—*H. Ox.* xv. 7. 11 *and* 13.

Grows in dense patches, branched, nearly upright, one to three inches high. *Leaves* slender, long, ending in a long sharp point, expanding. *Fruit-stalks* one or two inches high, generally solitary. *Capsules* cylindrical, thick, a little crooked, scored. *Lid*, beak as long as the capsule.

Mouth toothed. *Veil* long. Weis. Frequently several stalks in one involucrum. Willd.

(Broom Fringe-moss. E.) *Bryum scoparium.* Linn. Dill. E. Bot. *Dicranum scoparium.* Hedw. (Sm. Hook. E.) Heaths, woods, trunks of trees, shady banks, and dry pastures. P. Winter, spring, and summer.

(The above is var. *a. majus:* stems two or three inches in length, falcato-secund. *Dicranum majus,* E. Bot. 1490, according to Musc. Brit. wherein is also described var. *β. fuscescens;* smaller, leaves sub-secund, narrower, somewhat more crisped when dry. *Dicranum fuscescens.* E. Bot. 1597, the latter principally in mountainous countries. E.)

(2) *Capsules leaning, roundish.*

M. **fonta'num.** Capsules roundish: lid blunt: shoot sometimes branched, upright: leaves spear-shaped, slender, bent inwards at the points.

Dill. 44. 2—(*E. Bot.* 390—*Musc. Brit.* xxiii. E.)—*Vaill.* 24. 10—*Fl. Dan.* 298—*Happ.* iii. 7—*H. Ox.* xv. 6, *row* 3. 8—*Mich.* 59. 4—*Pluk.* 47. 2.

The old shoots covered with brown knap, and buried three inches deep. From these proceed slender cylindrical shoots, some of which end in stars. *Fruit-stalks* two inches long; proceeding from the shoots of the preceding year. Neck. Readily known by its stiff habit. *Shoots* two to four inches long. Weis. *Leaves* serrated, open, in the young shoots mostly pointing one way. In this species, and also in *M. palustre,* the fertile and barren shoots adhere so closely at bottom as to appear but one plant. Leers. The *veil* falls off in May. Gough.

(A smaller var. with narrower leaves, is *Bartramia marchica,* E. Bot. 2074; *Mnium marchicum,* Hedw. according to Musc. Brit. E.)

(Fountain Fringe-moss. *Bryum fontanum.* Huds. *M. fontanum.* Linn. Hedw. *Bartramia fontana.* Sw. Hook. E.) Low wet meadows, turf bogs, and springs. P. May—Aug.

M. **uligino'sum.** Capsules pear-shaped: lid blunt: shoots rarely branched: leaves oblong-spear-shaped, blunt.

Dicks. H. S.—*Hedw. Stirp.* i. 1 *and* 2—(*E. Bot.* 1517—*Musc. Brit.* xxviii. E.)—*Dill.* 49. 58—(*Schmid.* 57. 4. E.)

Shoot very short. *Fruit-stalks* three inches long, terminal. *Capsules* dull yellow, inversely egg-shaped. *Lid* blunt. Growing in patches. *Leaves* scattered, two lines or more in length. *Fruit-stalks* terminating. *Capsules* upright, afterwards bending a little; one line long. *Lid* short, pointed, white. *Veil* smooth, reaching but half way down. Pol. Primary stem not branched, but after bearing fruit it sends out a new shoot from its extremity, as is the case with many Mosses with terminal fruit-stalks. *Stamens* and *pistils* in the same or in separate flowers. *Ring* none. *Fringe* double, sixteen teeth in each. The *roots* are so closely attached together, that without great care they break off, and the plant appears without a stem. Hedw. Short, sessile, sometimes undivided, sometimes with one or two branches. *Leaves* green, narrow. *Fruit-stalks* about two inches high, of a shining gold colour. Dill.

(Marsh Sessile Fringe-moss. E.) *Bryum Trichoides.* Linn. (Sm. Hook. E.) *Maesia uliginosa.* Hedw. Wet meadows, in dense patches. P. May—June.

(3) *Capsules leaning, oblong.*

M. sim'plex. Capsules egg-oblong: fruit-stalks lateral: leaves awl-shaped.

Hedw. Stirp. ii. 34—(*E. Bot.* 1215—*Musc. Brit.* xvii. E.)—*Dill.* 50. 59—*H. Ox.* xv. 7, *row* 2. 19—*Buxb.* iv. 65. 2.

Shoots half an inch long. *Fruit-stalks* coloured, standing on the ends of the young shoots, but on the rib of the old ones. Neck. Not branched, often one inch long, growing in patches. *Leaves* crowded at the ends of the stem, hair-like, not crisp when dry. *Fruit-stalks* one or two together, eight or nine lines long. *Capsule* inversely egg-shaped. Pol. *Lid* rather broader than the capsule, beaked. *Mouth* elegantly toothed. Dill. With sixteen teeth in a single row, purplish. Hedw.

(Simple Fringe-moss. E.) *Bryum-rubrum.* Huds. Ed. i. *B. simplex.* Linn. *Dicranum varium.* Hedw. (Sm. Hook. Grassy sandy places, (and moist banks. E.) A. Mar.—May. P. Hedw.

In Musc. Brit. *Brya rufescens* and *callistomum* are arranged as varieties of this species. E.)

M. hetero-mal'lum. Capsules egg-shaped: lid taper-pointed, bent, shoot seldom branched: leaves bristle-shaped.

Hedw. Stirp. i. 26—(*E. Bot.* 1272—*Musc. Brit.* xviii. E.)—*Vaill.* 27. 7—*Dill.* 47. 37—*Fl. Dan.* 479—*H. Ox.* xv. 6, *row* 3. 5, *and in* 7 *the leaves straight*—*Buxb.* ii. 2, 8.

Stem half an inch high, upright, but not straight. *Leaves* not curled when dry. *Barren flower* always terminating. *Fruit-stalks* upright, single or in pairs. *Veil* opening at the side, deciduous. *Lid* beak bent. *Fringe* of sixteen teeth. Hedw. Seldom branched. *Leaves* hair-like, fine green, gradually narrowing from the base, mostly pointing one way. *Fruit-stalks* half an inch to one inch high, green, changing to fine red, sometimes in pairs. *Veil* pale green. Dill.

(Silky Heath Fringe-moss. E.) *Bryum heteromallum.* Linn. *Dicranum heteromallum.* Hedw. (Sm. Hook. E.) Hedge-banks, heaths, and roots of trees. On Snowdon. Dillenius. Cwm Idwell. Mr. Griffith. A. March—May.

Var. β. Leaves shorter, lower ones pointing two ways.

(*E. Bot.* 2508. E.)—*Dill.* 47. 38.

Leaves yellow green, suddenly narrowing from the base, upwards one-rowed, downwards two-rowed, curled when dry. *Veil* very slender, pale. Dill. *Leaves* broad and sheathing at the base, then bristle-shaped. *Fruit-stalks* shorter than the shoot. *Capsules* egg-oblong, equal in length to twice its breadth. (*Dicranum interruptum.* Hedw. Sm. E.) Specimen from Mr. Griffith, who gathered it on the rocks of Clogwy Dû yr Arddu, Snowdon. (On banks near Gateshead, Durham. Mr. Winch. E. Bot. E.)

M. glau'cum. Capsule egg-oblong: lid taper-pointed, bent: shoots branched: leaves egg-shaped, acute, tiled.

(*E. Bot*, 2166—*Musc. Brit.* xvi. E.)—*Dill.* 46. 20—*Vaill.* 26. 13—*H. Ox.* xv. 6, *row the last,* 22.

Leaves three lines or more in length, very entire. *Lid* awl-shaped, very sharp-pointed. *Mouth* fringed. Pol. Whole *plant* brittle, greyish when growing, or pale glaucous green; whitish when dry. *Veil* slender, white. Dill. One to three inches high; branches thick. *Fruit-stalk* one inch, but only half an inch higher than the shoots.

(White Fringe-moss. E.) *Bryum glaucum.* Linn. Dill. *Dicranum glaucum.* Hedw. (Sm. Hook. E.) Mountainous heaths. Near the copper-works at Llanberris; but very rarely bearing fruit. Mr. Griffith. P. Aug.—Nov.

M. pellu'cens. Capsules egg-oblong, small: lid taper-pointed, bent: shoot hairy: leaves spear-shaped, reflexed, acute.

Hedw. Theor. 8. 1 *to* 4—(*E. Bot.* 1346—*Musc. Brit.* xvii. E.)—*Dill.* 46. 23. 24—*Pluk.* 44. 7. *Pluk.* 49. 1, *several shoots rising from the top of that of the last year.*

Shoots from one to three inches, with rust-coloured hair-like fibres on the lower part. *Leaves* slender, keeled, crooked, pellucid, sometimes wrinkled. *Fruit-stalks* sometimes in pairs; terminating. *Capsules* brown when dry. Dill.

(Pellucid Fringe-moss. E.) *Bryum pellucidum.* Linn. Dill. (*Dicranum pellucidum.* Sw. Sm. Hook. E.) Marshy and shady places. Near North Bierly, not far from Bradford, Yorkshire, and on the sides of lakes on the Glyder and Snowdon mountains. P. June—Sept.

M. palus'tre. Capsules egg-oblong: lids conical: shoots branched, forked: leaves awl-spear-shaped, acute.

(*E. Bot.* 391—*Musc. Brit.* xxviii. E.)—*Dill.* 31. 3—*Vaill.* 24. 1—*H. Ox.* xv. 6, *row* 3. 9—*Schmid.* 56. 2.

Capsules crooked after shedding their seeds. *Fruit-stalks* slightly waved, Griff. *Fruit-stalks* yellow. Reyg. often two inches long, Relh. from the fork of the stem Neck. crowded. *Stems* upright, two to five inches high; mostly two, sometimes with three divisions. *Leaves* slender, soft, pellucid, keeled, yellow green, yellow when dry. Dill. *Stems* two or three inches high, branching towards the top into two, three, or four shoots. *Leaves*, lower ones downy. *Summit-leaves* flat, large, forming stars, in which are the barren flowers. *Fruit-stalks* from the tops of the last year's shoots, which now likewise support new shoots. *Capsules* leaning.

(Forked Fringe-moss. *Bryum palustre.* Sw. Turn. Hook. E.) Turf bogs and wet heaths, marshes and moors. P. June—July.

Var. 2. Stem branched, upright. Fruit-stalks from the bosom of the leaves. Huds.

Dill. 31. 4.

Stem sometimes simple. Dill. 236. *Fertile flowers* not discovered. Dill. in R. Syn. 78. n. 3. Smaller than the preceding. *Fruit-stalks* axillary, numerous, not terminating in capsules, but in small globular heads containing a powder. This seems to be the barren plant.

M. ramosum. Huds. Ed. i. 403, and Gmel. Syst. Veg.

M. purpu'reum. Capsules nearly cylindrical: fruit-stalks axillary: shoots branched: leaves oblong, acute, keeled.

(*E. Bot.* 2262—*Hedw.* 36—*Musc. Brit.* xx. E)—*Dill.* 49. 51—*H. Ox.* xv. 6, *row* 4. 4, *some of the fruit-stalks terminating.*

Grows in very dense patches. *Stem* upright, mostly forked, and these shoots sometimes dividing again. *Leaves* spear-awl-shaped, in some shoots forming terminal stars. *Fruit-stalks* an inch high, at first upright, afterwards a little leaning. *Lid* conical, pointed, scarlet. *Veil* upright, afterwards oblique. Weis. (*Fruit-stalks* purple. E)

(PURPLE-STALKED FRINGE-MOSS. *M. purpureum.* Linn. *Bryum purpureum.* Huds. Lightf. *Dicranum purpureum.* Hedw. Sm. (*Didymodon purpureum.* Musc. Brit. Under this species Drs. Hooker and Taylor also include *Dicranum strictum.* Sm. *Trichostomum papillosum.* Sm. E. Bot. 2533: *Bryum strictum* and *tenue.* Dicks. *B. bipartitum.* Dicks. E. Bot. 2357. and *Dicranum Celsii.* Hedw. E. Bot. 2418. E.) Walls, heaths, rocks, and gravelly banks and pastures. April.

Var. 2. (*Dicranum strictum.* E. Bot. E.) Leaves less rigid; spear-shaped.

(*E. Bot.* 2294. E.)—*Dill.* 49. 52.

Leaves ending in hair-like points. *Capsule* finely pointed. Dill. (May not the different situations of growth account for the variation of this plant from the preceding? E.)

On Emott Moor on the borders of Lancashire; and Shobdon Marsh, Herefordshire. Near Llyn Aled Lake. Mr. Griffith. (On Prestwick Carr, Northumberland. Mr. Winch. E.) June.

(4) *Capsules drooping.*

M. ARCUA'TUM. Capsules globular, toothed: shoots branched: leaves oblong-spear-shaped, taper-pointed, scored. Dicks.

Dicks. H. S. and Fasc. iii. 7. 3—(*E. Bot.* 1237—*Musc. Brit.* xxiii. E.)—*Dill.* 39. 36.

Leaves upright but spreading; serrulated. *Barren* flower terminal, star-like. *Fruit-stalk* terminal, crooked, surrounded by young shoots. *Capsule*, mouth narrow. *Fringe*, teeth short, upright, acute. red. *Lid* minute, scarcely beaked. Dicks. The fuscous woolly matter which surrounds the *shoot* is a constant attendant. *Fruit stalks* at the base of the branches, golden red, hardly half an inch long, crooked. *Capsule* golden yellow, globular. Mr. Bradbury. *Leaves* serrulated chiefly towards the end.

(CURVED-STALKED FRINGE-MOSS. *M. arcuatum.* Dicks. (*Bartramia arcuata.* Brid. Turn. Sm. Hook. E.) *Hypnum chrysocomum.* With. Ed. ii. In bogs in the northern parts of Yorkshire, and on moist places on Glyder mountain. Dillenius. Boggy places in Scotland. Dickson. On bogs with *Mnium palustre* in Greenfield, Saddleworth, Yorkshire, and Stayley, Cheshire. Mr. Bradbury. By the side of Avon las, near Pistyll-wen, in Llanberris parish, Mr. Griffith. (Foot of Pentland hills, near Edinburgh Mr. Brown. In the recesses of the Cumberland mountains it bears fruit abundantly. Mr. Winch. This extremely beautiful Moss, though unknown on the Continent, is of common occurrence in the mountainous districts of Ireland, Musc. Brit. E.) Nov.

M. NU'TANS. Capsule spear-shaped: lid blunt: shoots somewhat branched: leaves egg-shaped, acute.

Hedw. Stirp. iii. 8—(*Musc. Brit.* xxix.—*E. Bot.* 1572. E.)—*Dill.* 51. 74.

Shorter than the preceding. *Capsules* spear-shaped, *i. e.* largest at the end. *Leaves* deeply keeled, closing together when dry, very much crowded and compressed. *Stem* and leaves at the bottom black. *Lids* very short and blunt. Dill.

(Pendulous Fringe-moss. E.) *M. turbinatum.* Hedw. (*Bryum turbinatum.* Sw. Sm. Hook. E.) *M. triquetrum* γ. Huds. 491. *Bryum ventricosum* γ. With. Ed. ii. Marshy places. On Shootor's Hill near Eltham, and in Wales. Spring and Summer. Dill.

(The above species seems liable to considerable variation. Drs. Hooker and Taylor suspect *Bryum interruptum,* E. Bot. 2371; *B. nigricans,* E. Bot. 1528; and possibly *B. annotinum,* E. Bot. 1862, (the barren magnified figure), may not prove specifically distinct. E.)

M. hygrome'tricum. Capsules pear-shaped, lids flat: shoots rarely branched: leaves oblong, taper-pointed.

(*Hook. Fl. Lond.*—*E. Bot.* 342—*Musc. Brit.* xx. E.)—*Dill.* 52. 75—*Vaill.* 26. 16—*H. Ox.* xv. 7. 17—*Happ.* i. *Mnium* 2—*Fuchs.* 629. 2—*Trag.* 528. 2—*J. B.* iii. 760. 2—*Lon.* i. 222. 4—*Dod.* 475. 1—*Ger. Em.* 1559. 4, *the middle one of the three lower figures.*—*Park.* 1052, *left hand upper fig.*—*Fl. Dan.* 648—*Ger.* 1371. 4.

Grows in large patches. *Stem* one to two inches high, but mostly buried in the earth. *Fruit-stalk* a full inch long. *Capsules* pear-shaped, golden yellow. Weis. It may be found in December, very small and close to the ground, the *leaves* very fine, from the midst of which projects the young *fruit-stalk* like the point of a pin. In January the four-sided *veil* appears, of a straw colour; in February and March the *capsules* are found, which ripen in April and May. *Leaves* tender, pellucid, veinless. Dill.

(Revolving Fringe-moss. E.) *Bryum hygrometricum.* Huds. *Koelreuteria hygrometrica.* Hedw. (*Funaria hygrometrica.* Hedw. Roth. Sm. Hook. E.) Common in woods, heaths, on garden walks, walls, old trees, decayed wood, and where coals and cinders have lain. A. March—May.

If the fruit-stalk be moistened at the bottom, the head makes three or four revolutions: if the upper part be moistened, it turns the contrary way. Linn.

M. cuspida'tum. Capsules egg-shaped: leaves egg-shaped, pointed, serrated.

(*Hedw.* 45. 5. 8—*E. Bot.* 1474—*Musc. Brit.* xxxi. E.)—*Dill.* 53. 79—*Vaill.* 26. 18—*Happ.* ii. 6.

Shoots half an inch high; lower leaves smaller, blunter, alternate, upper leaves larger, more acute, pellucid, smooth, sharply serrated and pointed at the end by an extension of the mid-rib. *Fruit-stalks* half to one inch long, when old saffron-coloured, issuing out of a purple tubercle encompassed by slender leaves. *Capsules* egg-shaped. Dill. (*Foliage* altogether of a pale, but bright green. Musc. Brit. E.)

(Hairy-pointed Fringe-moss. *M. cuspidatum.* Hedw. *M. serpyllifolium* β. Linn. E.) *Bryum serpyllifolium cuspidatum.* Huds. and With. Ed. ii. Woods, moist heaths, shady places, and in bogs on heaths and meadows. P. April.

M. **HOR'NUM.** Capsules egg-shaped: leaves spear-shaped, acute, serrated.

(*E. Bot.* 2271—*Musc. Brit.* xxxi. E.)—*Dill.* 51. 71—*Mich.* 59. 2—*Curt.*—*Vaill.* 24. 4 *and* 5—*H. Ox.* xv. 6, *row the last*, 3 *and* 4, *as it sometimes appears before it produces capsules.*

From half to one inch high, but larger in moister situations, mid-rib red, stiff. *Leaves* green, pellucid, finely crenated. *Fruit-stalk* saffron red, shining, one to two inches long, bent like a swan's neck. *Capsule* oblong, nodding, swollen, dark green. *Lid* brown. *Leaves* at the base of the fruit-stalk slender. Dill. *Barren shoot* simple; *fertile* branched at the base. *Leaves* sharply serrated and ending in a sharp point. (Whole *plant* of a yellow lurid green colour. Musc. Brit. E.)

(SWAN'S-NECK FRINGE-MOSS. *Bryum hornum.* Huds. Curt. Sm. Hook. E.) Woods, moist, shady, and boggy places. P. Feb.—May.

M. **CAPILLA'RE.** Capsules oblong-egg-shaped: fruit-stalks from near the root: leaves egg-shaped, keeled, bristle-pointed.

(*E. Bot.* 2007—*Musc. Brit.* xxix. E.)—*Dill.* 50. 67—(*Fl. Dan.* 1122. 2. E.)—*H. Ox.* xv. 6, *row* 5. 19—*Vaill.* 24. 6.

Shoots, at the ends of some a very small brown star. Very nearly allied to *B. cæspiticium.* Linn. *Leaves* short, broad, ending in a short hair. *Fruit-stalk* one inch long, issuing from the last year's shoots. *Capsules* swollen, reflexed. *Lid* hemispherical, shining. Ray. *Capsules* less pendent when ripe. Dill. From half to one inch high. Its sessile *shoots*, and expanding upper *leaves*, distinguish it from *B. cæpiticium*, though it should not be in fruit. Neck. Differs from *B. cæspiticium* in its greater size, the *lids* of its capsules being sharp-pointed, and its *leaves* not shining. Weis.

(The authors of Musc. Brit. consider E. Bot. 1862. the fructified specimens, (*Bryum annotinum*), rather to represent *B. capillare*: and that *B. stellare*, E. Bot. 2243, and Dill. 50 67. also belong to the same species, the true *B. stellare* never having been found in Britain. E.)

(CAPILLARY FRINGE-MOSS. E.) *Bryum capillare.* Linn. Huds. Mud walls, heaths, roofs. (Sm. Hook. E.) P. Feb.—March.

M. **ANNO'TINUM.** Capsules oblong-egg-shaped: fruit-stalks from near the root: leaves pellucid, egg-shaped, taper-pointed.

Dill. 50. 68.

Leaves spear-shaped, pointed, not twisting when dry, turning brown when soaked in water. *Fruit-stalk* one inch long. *Capsule* oblong, pendent. *Lid* pointed; blunter when old. Dill. *Stem* half to one inch high, simple, or branched almost from the bottom. *Leaves* very entire, those on the stellated shoots broader.

(Doubts are entertained whether this may not prove a distinct species. The synonyms appear somewhat perplexed. E.)

(SUMMER FRINGE-MOSS. E.) *Bryum annotinum.* Huds. Woods and moist shady places. Cryb y Ddescil. Mr. Griffith. Spring and Summer.

M. **PUNCTA'TUM.** Capsules oblong-egg-shaped: stem unbranched: fruit-stalks often several together: leaves inversely egg-shaped, very entire, blunt, (broad, E.) dotted.

(*E. Bot.* 1183—*Musc. Brit.* xxx. E.)—*Dill.* 53. 81—*Happ.* ii. 4—*Vaill.* 26. 5—*Pluk.* 45. 7—*H. Ox.* xv. 6. 39 *and* 40.

It varies in the *fruit-stalks* being solitary or incorporated, and also in the *fertile* shoots being upright, and the *barren* shoots creeping. Wild. Grows in large patches. *Stems* simple. *Leaves* with a scarlet rib, cartilaginous and purple at the edges. *Fruit-stalks* terminal, generally single, sometimes three or four together; one to two inches high; thicker downwards. *Capsules* nutant, egg-shaped. *Seeds* greenish. *Shoots* without capsules, ending in roses. Weis. *Leaves* pellucid, smooth, pale green. *Fruit-stalks* one to three on a plant. Dill.

(Dotted Fringe-moss. E.) *Bryum serpyllifolium punctatum.* Huds. *M. serpyllifolium α.* Linn. (*Bryum punctatum.* Schreb. Turn. Sm. Hook. E.)

Var. 2. *Punctatum.* With. Ed. ii. Leaves longer, more pellucid.

Dill. 53. 80.

Leaves longer and blunter than β of Linnæus. *Capsules* not so pendulous. *Lid* spit-pointed. *Fruit-stalks* three to five on a plant. Dill.

In bogs in the West Riding of Yorkshire.

Capsules half ripe in spring. Dill.

M. undula'tum. Capsules oblong-egg-shaped: fruit-stalks several together: leaves oblong, waved, serrulated.

(*Hook. Fl. Lond.*—*E. Bot.* 1449—*Musc. Brit.* xxx. E.)—*Dill.* 52. 76—*Vaill.* 24. 3—*Mich.* 59. 5—*Tourn.* 326 *E.*—*Pet. Gaz.* 95. 16—*H. Ox.* xv. 6, *row the last,* 1—*Neck. Meth. f.* 6, *at p.* 273, *a star-like head.*

Root strong, creeping. *Shoots* three or four to five or six inches long, branched or unbranched. *Leaves* thin, pellucid, strap-spear-shaped, waved and serrated. *Capsule* pendent; lid blunt. *Veil* straight, pointed. Dill. *Barren* flower surrounded by strap-shaped leafits, in the centre of shoots ending in roses. *Leaves* strap-shaped; mid-rib large.

(Undulated Fringe-moss. E.) *Bryum serpyllifolium undulatum.* Huds. *M. serpyllifolium undulatum.* With. Ed. ii. Schreb. Sm. Hook. *M. undulatum.* Hedw. *M. serpyllifolium δ.* Linn. Dill. (*Bryum ligulatum.* Hook. E.) Moist shady woods about the roots of trees and hedges.

P. April.[*]

M. prolif'erum. Capsules oblong-egg-shaped: shoots proliferous: leaves spear-shaped, pointed, forming terminal roses.

(*E. Bot.* 2395—*Musc. Brit.* xxix. E.)—*Dill.* 52. 77—*Buxb.* 11. 1. 3.

Stems straight, naked. *Leaves* terminal, large, shining, pellucid, disposed in a circle, widening upwards, ending in a point, scarce sensibly serrated. *Capsules* on a different plant, rarely appearing, pendent; lid reddish, blunt. *Fruit-stalk* one inch long, thick. Dill. Very elegant in form:

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[*] (On the leaves of this Moss, and also upon *Dicranum Bryoides*, in Wallington woods, Northumberland, may sometimes be discovered one of the most elegant of the minute *Gastromyci*, viz. *Leangium Trevelyani*, which, as Dr. Greville observes, "whether we regard the extreme symmetry of its form, or its delicate structure, and pleasing colour, forms one of the most charming little objects the eye can possibly rest upon." It is beautifully illustrated in Scot. Crypt. Fl. pl. 132. and thus described: "sporangium sessile, ovato-globose, reddish-brown, splitting into regular linear, reflexed segments; columella minute; sporules pedicellated." E.)

shrub-like. *Stem* naked at the bottom, foliage from one centre at the top. *Leaves* from three to six lines long, and two broad. Other shoots often rise from this foliage. Some of these are barren roses, but others send out fruit-stalks, one or two inches long, bearing pale orange capsules. *Veils* not observed. Weis.

(Proliferous Fringe-moss. E.) *Bryum serpyllifolium proliferum*. Huds. and With. Ed. ii. (*Bryum roseum*. Schreb. Sm. Hook. E.) Wet places in woods and heaths near Bishop's Castle. Dillenius. Bungay, Suffolk. Mr. Stone. Winter.

M. cru'dum. Capsules oblong-egg-shaped: shoot unbranched: leaves spear-shaped, acute.

(*E. Bot.* 1604—*Musc. Brit.* xxviii. E.) —*Hedw. Stirp.* i. 37—*Hill.* 51. 70—*Vaill.* 26. 12.

Leaves green, almost silky. *Fruit-stalks* long, red. Linn. Half an inch high; not branched. *Leaves*, upper ones thrice as long as the lower, crowded, upright but open. *Capsules* upright, then pendent, and lastly upright again. *Veil* turning up when the capsule hangs down. *Lid* hemispherical, beak short, stellated plant not so tall. A powdery brown substance in the centre of the star. Leers. *Fertile stem* half an inch; *Barren stem* half an inch high, or more. *Leaves*, the upper ones a little toothed towards the ends. *Capsule* bent horizontally. Mouth, outer fringe of sixteen teeth. Hedw. *Fruit-stalks* from the ends of the young shoots; pale red. Dill. The whole *plant* has a silky gloss. *Lower leaves* broader and shorter than those above; a few of the *uppermost* sometimes very slender pointed.

(Pale Fringe-moss. *M. crudum*. Linn. Hedw. Dill. *Bryum crudum*. Huds. Sm. Turn. Hook. E.) Fens in Cambridgeshire. Dillenius. Woods about Rydall, Westmoreland. Hudson. Crib y Ddescil, Carnarvonshire, Cader Idris, Merionethshire. Mr. Griffith. P. March—June.

M. cæspiti'cium. Capsules oblong-egg-shaped: shoots short, but branched: leaves spear-shaped, hair-pointed.

Curt. 106—(*E. Bot.* 1904—*Musc. Brit.* xxix. E.)—*Dill.* 50. 66—*H. Ox.* xv. 6, *row* 5. 15—*Vaill.* 29. 7.

Fruit-stalks red at the bottom, yellow green at top. Reyg. Grows in broad dense patches. Only a few lines high; branched at the top, covered with a brown knap at bottom. *Leaves* very small, crowded, shining. *Fruit-stalks* an inch (or two) high, issuing from the roses of last year's shoots, surrounded at bottom with a leafy sheath or fence. *Capsule* at first uprigh; slender, egg-shaped. *Lid* red, shining, mammeform. *Mouth* slightly fringed. *Veil* brown, changing to tawny red. Weis. and Dill. *Leaves* mid-ribbed. *Fruit-stalks* from an oblong bulb, invested with hair-like fibres. Outer coat of the *capsule* with sixteen teeth.

(Under this species Hooker and Taylor include *B. bicolor*, Dicks. E. Bot. 1601. E.)

(Lesser Matted Fringe-moss. *Bryum cæspiticium*. Linn. Huds. Curt. Turn. Sm. Hook. *B. erythrocarpum*. Dill. Old walls, stones, roofs, grass, gravel, banks, and hillocks. P. Feb.—April.

M. pseudo-tri'quetrum. Capsules oblong-egg-shaped: shoots branched: leaves egg or spear-awl-shaped, bordered, keeled, pointing in three directions.

(*E. Bot.* 2270—*Musc. Brit.* xxx. E.)—*Hedw. Stirp.* iii. 7—*Dill.* 51. 72—
Vaill. 24. 2 *and* 2—*H. Ox.* xv. 6, *row* 5. 20.

Capsule, the neck downwards becomes gradually narrower. Dicks. *Stems* simple or branched: branches sometimes very slender, at others thicker and shorter; thickest where the fruit-stalks put forth, the leaves there expanding in the form of stars. *Fruit-stalks* near two inches long, purple. *Capsules* bent downwards, tumid, green. *Lid* small, shining, white. *Veil* short, brown, red. Dill.

(Messrs. Hooker and Taylor state, "It must be allowed that the differences between this Moss and β (*Mnium*) *cæspiticium* are almost insufficient, and that it is more distinguishable by its larger size, proliferous habit, and brown or purple hue, than by any more essential characters." Musc. Brit. The same authors likewise reduce to the present species, *Bryum bymum*, Schreb. E. Bot. 1518: and *B. cubitale*, Dicks. E. Bot. 2554. E.)

(VENTRICOSE BOG FRINGE-MOSS. *Bryum ventricosum*. Dicks. Gmel. Turn. Sm. Hook. *Bryum triquetrum*. Huds. *M. triquetrum* according to Lightf. 715. Huds. and Relh. n. 786, but in the specimens of *M. triquetrum* in the Linnæan Herbarium and Ehrhart's *phytophyllacium* the capsules are upright, slanting. Dicks. (Vid. E. Bot. 2391. E.) Turf bogs and marshy places. Turf pits, Ellingham Fens, Norfolk. Mr. Stone. On mud or gravel by the sides of rivulets and springs, in the ascent of Snowdon and Glyder. Mr. Griffith. (On the sandy brink of the river at Mavis Bank, near Edinburgh. E. Bot. E.) March—May.

Var. 2. Larger in all its parts.

Dill. 51. 73—(*Fl. Dan.* 1122. 1. E.)

Leaves spear-shaped, alternate. *Fruit-stalks* red, sometimes branched. *Leaves* pellucid, green, shining. When about to flower it sends forth some reddish shoots, with finer leaves encompassed by others of a paler green. Flowers in the summer. Dill. *Leaves* almost hair-pointed.

Bryum triquetrum β. Huds. 490. *B. ventricosum* β. With. Ed. ii. In marshy places. The *red* kind is found in the mountain torrents of Snowdon, and the *green* in high boggy heaths about London and Oxford. Dillenius. Near Celin House, two miles from Holywell. Mr. Griffith.

BRYUM.* *Fruit-stalk* terminal, issuing out of a tubercle: *Capsule* with a veil.

Barr. Fl. a *bud* either on the same or on a different plant, often axillary.

SUBDIVISIONS OF THE BRYA.

A. Capsules sessile, or nearly so.

B. Capsules on fruit-stalks, upright.
  1. Stemless.
  2. Stem very short, rarely branched.
  3. Stems trailing.
  4. Stems upright.

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* (From βρυω, *germino*, *pullulo*, to sprout or shoot up · probably alluding to the perpetual viridescence of these plants. It was first used as a generic name by Dillenius, and afterwards adopted by Linnæus. E.)

a. Capsules roundish.
b. Capsules egg-shaped,
c. Capsules oblong.

C. Capsules on fruit-stalks, leaning.

1. Stem none, or very short and unbranched.
2. Stems upright.

D. Capsules on fruit-stalks, drooping.

1. Stem none, or very short and unbranched.
2. Stems upright.

A. Capsules sessile, or nearly so.

B. **APOCAR'PUM.** Capsules sessile, terminal: beak bent: veil very small.

(*E. Bot.* 1134—*Musc. Brit.* xii.—*Schmid.* 57. 1. E.)—*Vaill.* 27. 15—*Hedw. Stirp.* i. 39—*Dill.* 32. 4—*Fl. Dan.* 480—*Happ.* iii. 2.

Shoots one to two inches high; somewhat branched. *Leaves* at the ends of the shoots and branches, paler, longer, hairy at the end; from amongst these rise up *fruit-stalks*, very short, purple, with a yellow tubercle. *Capsules* oblong, smooth, green, changing to yellow. *Mouth* purple, open, elegantly fringed. *Lid* scarlet. *Veil* pale yellow, deciduous. The *fruit-stalks* are so enveloped by the leaves at the extremity of the shoots, that neither they nor the capsules can be distinctly seen, but the scarlet lid strikes the eye. Weis. (*Fringe* of sixteen red, entire, spreading teeth, broad at the base, tapering to a fine point. E. Bot. According to the authors of Musc. Brit. the differences which have distinguished the several species here united arise merely from local circumstances. E.)

(SESSILE BEARDED THREAD-MOSS. E.) *Grimmia apocarpa.* Hedw. Turn. Sm. Hook. *G. alpicola.* Sw. Hedw. Sm. *G. rivularis.* Brid. Sm. Turn. *G. apocaula.* Hoffm. Dill. E.) Rocks, stones, and trees. Walls and roofs of houses. Nov.—April.

Var. 2. Shoots longer and more branched, leafits ending in hairs.

Hedw. Stirp. i. 40—*Dill.* 32. 5, *B dry, A moistened*—*Vaill.* 27. 18.

In spreading tufts like the preceding, but the stems are longer, more branched, more leafy. *Leaves* broader, terminal hairs longer; dilute green in winter, hoary in spring. The ends of the *branches* often hooked, which never happens in the preceding variety. *Capsules* inclosed in leafy scales, green; the young ones at the ends, the old ones at the sides of the branches. Dill.

Hedwigia ciliata. Hedw. Rocks and trees.

B. **SES'SILE.** Capsules sessile: beak straight: leaves straight, keeled.

Dill. 55. 10—(*E. Bot.* 1325. E.)

Grows in tufts. *Stem* about an inch high, somewhat branched. *Leaves* numerous, straight, keeled, pellucid when wet, opake and darker green when dry. *Fruit-stalks* very short, thick at the bottom. *Veil* brown, hairy, striated. Dill.

(STRAIGHT-LEAVED THREAD-MOSS. E.) *B. striatum* var. γ. With. Ed. ii.

Rocks near Bangor. Dillenius. On stones on the side of rivers which are washed by the water in high floods. Mr. Griffith. (Mr. Sowerby gathered it on upright posts by the Thames at Wandsworth. E. Bot. E.) Autumn.

B. TECTO'RUM. Capsules sessile axillary: veils hairy, conical.

Hedw. Stirp. 11. 37—(*E. Bot.* 1423—*Musc. Brit.* xxi. E.)—*Dill.* 55. 9—*Vaill.* 27. 10—*H. Ox.* xv. 6, *row the last,* 13.

Plant smaller than *B. striatum,* leaves smaller, darker green: veil paler and more distinctly toothed at the base. Dill. Differs also from it in wanting the inner *fringe,* and having the edge of the *veil* scolloped. Hedw.

(ROUGH SINGLE-FRINGED THREAD-MOSS. E.) *Orthotrichum anomalum.* Hedw. (*O. cupulatum.* Hoffm. Hook. Grev. *O. nudum.* Dicks. E. Bot. 1325, is likewise included in this species by the authors of Musc. Brit. who appear to consider the real *O. anomalum* of Hedwig, (also in Musc. Brit. xxi., and *B. striatum β.* Linn.) to be distinct from the plant so denominated by Smith; but the difference is not very obvious. E.) On stones, walls, and the ground. Feb.—April.

(Var. 2. Leaves mid-ribbed, hair-pointed. Capsules on short fruit-stalks, terminal, with sixteen slender expanding teeth. Veil hairless, ribbed. April. E.)

B. STRIA'TUM. Capsules oblong, sessile, axillary or terminal: veil hairy: leaves spear-shaped, acute.

(*E. Bot.* 2187—*Musc. Brit.* xxi. E.)—*Hedw. Stirp.* ii. 36—*Neck. Meth.* 1. 2, *at p.* 273, *a capsule magnified.*—*Dill.* 55. 8—*Fl. Dan.* 537. 3—*Vaill.* 25. 5 *and* 6.

Obs. Nearly allied to the *Polytricha,* but wanting the fleshy receptacle below the capsule. Linn.

Shoots one inch high, branched. *Capsules* lateral. *Mouth* nearly smooth, without a ring. Neck. Branched; two or three inches high. *Leaves* as if gnawed at the ends. *Florets* of both sorts on the same or on distinct plants. *Fruit-stalk* very short, sheathed at the base. *Capsules* egg-shaped. *Lid* small, beak blunt. *Fringe* double, sixteen teeth in each. Found both in flower and in fruit almost all the year. Hedw.

(COMMON THREAD-MOSS. *B. striatum α.* Linn. E.) *Polytrichum striatum.* Huds. *Orthotrichum striatum.* Hedw. (very nearly allied to which is *O. speciosum.* Musc. Brit. Sup. iv. E.) In woods, on the trunks of old trees. The veils appear in winter, and the capsules in Feb. March, and April. Dill. P.

B. Capsules on fruit-stalks, upright.

(1) *Stemless.*

B. CUNEIFO'LIUM. Capsules cylindrical, toothed: leaves wedge-egg-shaped, pellucid, reticulated. Dicks.

(*E. Bot.* 1510—*Musc. Brit.* xii. E.)—*Dill.* 45. 15—*Buxb.* i. 64.

Leaves shorter, broader, and softer than in *B. murale,* pellucid, green, not hoary with hairs. Grows much crowded with hairs, but not in a circular form. Dill.

(WEDGE-LEAFED THREAD-MOSS. *B. cuneifolium.* Dicks. Sm. Hook.

Tortula cuneifolia. Turn. *B. murale* β. Huds. and With. Ed. ii. On banks of earth near Streatham, Surry, and at Oxford. Dillenius. (Particularly common in Devonshire, especially near Torquay and the hilly country about Tor-point. Musc. Brit. E.) Winter.

B. MURA'LE. Capsules oblong: lids conical, acute: shoots very short, subdivided: leaves mid-ribbed, egg-shaped, acute, hair-pointed.

(*E. Bot.* 2033—*Musc. Brit.* xii. E.)—*Dill.* 45. 14—*Vaill.* 24. 15, *in a tuft* —*Buxb.* i. 64. 4—*Mich.* 59. 7.

Sometimes grows in tufts, but often spreads in shady places. *Leaves* opake, approaching, rigid, fine green when wet, dull green when dry. Dill.

(The lower leaves generally lose their terminal hairs. When the lid is carefully removed from the capsule, the mouth of the latter is seen adorned with a conical pencil of rich saffron-coloured hairs twisted spirally, and projecting so as to fill up the lid. E.)

(WALL THREAD-MOSS. *Tortula muralis.* Hedw. Sm. Hook. E.) Walls, roofs, tiles, stones, rocks and sandy places, everywhere. P. Nov.—March.

B. OBTU'SUM. Capsules inversely egg-shaped, lopped: lid convex: leaves spear-egg-shaped, taper-pointed. Dicks.

(*E. Bot.* 1407. E.)—*Dicks.* 4. 7. *a. b.*

Fringe none. *Veil* bell-awl-shaped. *Leaves*, under the microscope, reticulated, finely toothed. Differs from *B. truncatulum* in the beaked lid, and its capsule being longer, &c. Dicks.

(OBTUSE THREAD-MOSS. *B. obtusum.* Dicks. *Gymnostomum obtusum*, Hedw. Turn. Sm. with which is assimilated in Musc. Brit. (vii.) *G. Heimii.* Hedw. Sm. Hook. E.) Stones and rocks on Ben Crechan, Scotland. (Common about Yarmouth. Mr. Turner. E.)

B. OVA'TUM. Capsules egg-shaped: leaves egg-shaped, concave, hair-pointed. Dicks. ii. 4.

Dicks. H. S.—*Hedw. Stirp.* i. 6—(*E. Bot.* 1889—*Musc. Brit.* vii. E.)—*H. Ox.* xv. 7. 18.

Very minute, unbranched, with scarcely any stem. *Flowers* terminal. *Fruit-stalk* upright, not longer than the capsule. *Veil* reddish brown. *Lid* conical, beak oblique. Very common on mud walls, spreading in broad and dense patches; seldom on the ground.

(Some authors discriminate var. *α. vulgare*; capsule ovate; and β. *gracile*; capsule oblong. This species is remarkable for the nerve of the leaf being furnished with a large, oblong, membranous appendage, to the surface of which are attached minute greenish bodies, probably *gemmæ*, as represented by Hedwig. Musc. Brit. E.)

(HAIR-POINTED THREAD-MOSS. E.) *Gymnostomum ovatum.* Hedw. (Sm. Hook. E.) Pastures. Mud walls. April—May.

B. PUSIL'LUM. Capsules oblong, fringed: leaves concave, egg-awl-shaped. Dicks. ii. 6.

Hedw. Stirp. i. 28—(*E. Bot.* 2380. E.)

Stem unbranched, upright, very minute, not more than two or three lines high. *Leaves* concave and egg-shaped at the base, but very long and slender upwards. *Barren* flowers in the bosom of the leaves. *Fruit-stalks* on the same plant terminal, thrice as long as the stem, nearly upright. *Fringe* single, of sixteen teeth, deeply divided, red.

(Dwarf Thread-moss. E.) *Trichostomum pusillum.* Hedw. In sandy places. A. Feb.—March.

B. **pyrifor'me.** Capsules pear-shaped: leaves flat, oblong, acute.

Dicks. H. S.—(*E. Bot.* 413. E.)—*Dill.* 44. 6—*Fl. Dan.* 537. 1—*Vaill.* 29. 3—*H. Ox.* xv. 7, *row* 2. 16, *p.* 631—*Buxb.* i. 64. 1.

Fruit-stalks half to one inch long. Relh. n. 1015. *Leaves* one line broad, one and a half long. *Involucrum* none. *Fruit-stalk* about three lines long. *Capsule,* mouth without fringe. Pol. *Veil,* before the capsules swells, four-sided; afterwards it tears into two, three, or four segments. *Leaves* tender, pellucid, pale green. *Capsules* large for the size of the plant, which rises but little above the ground. Dill.

(Pear-shaped Thread-moss. E.) Heaths, hedges and ditch banks. A. Feb.

B. **stella'tum.** Capsules pointed, bearded: leaves egg-spear-shaped, pointed, somewhat rolled in. Dicks. ii. 6.

(*E. Bot.* 2384—*Musc. Brit.* xii. E.)—*Dill.* 49. 56.

(*Stems* very short, tufted; *leaves* oblongo-ovate, or ovate, rather concave, sub-opaque, mucronulate, furnished with a strong brown nerve. Musc. Brit. and according to the learned authors of that work, this appears to be *Barbula agraria* of Hedwig, a tropical plant, and a rare instance of such having been found in so northern a region, unless indeed Mr. Dickson should, by some accident, have mistaken a foreign specimen for one gathered in Scotland. E.)

(Stellated Thread-moss. *Tortula stellata.* Sm. Hook. E.) On ditch banks and margins of rivulets, Scotland.

B. **calca'reum.** Capsules inversely conical, toothed: leaves upright cylindrical, bluntish. Dicks.

Dicks. H. S.—*E. Bot.* 191—(*Musc. Brit.* xv. E.)—*Dicks.* 4. 3.

A dwarfish plant, smaller than *B. paludosum,* but the capsules sufficiently large and conspicuous. *Lid* conical, with a beak somewhat slanting. *Veil* slender, slanting. Dicks. *Capsules* with sixteen teeth; not with twelve as in Dickson's figure.

(Limestone Thread-moss. *Weissia calcarea.* Hedw. Hook. *Grimmia calcarea.* Sm. Turn. E.) On limestone rocks near Newmarket Heath. (On shady rocks at Garregwen near Garn, Denbighshire. Mr. Griffith. E.)

B. **cervicula'tum.** Capsules egg-shaped, unequal, toothed: leaves very slender.

Hedw. Stirp. iii. 37. A.—(*E. Bot.* 1661—*Musc. Brit.* xvi. E.)

Not branched; upright. *Lower leaves* very minute, spear-shaped; upper oblong-spear-shaped, concave, with a very long tapering point, expanding when moist, closing but not curling when dry; pale green. *Capsules* egg-shaped but less convex on one side, which gives it an appearance of leaning. *Lid* fine red, slanting, taper-pointed.

(RED-NECKED THREAD-MOSS. E.) *Dicranum cerviculatum.* Hedw. Turn. Sm. Hook. On bogs and moist banks.

(Messrs Hooker and Taylor have reduced to this species *B. parvulum.* Dicks. With. "Scarcely a line in height. Leaves concave and dilated at the base, fine green, without a mid-rib. Fruit-stalk yellow green. Capsule egg-shaped. Beak long, slanting, reddish at the base." *Dicranum pusillum.* E. Bot. 2491. Also *Dicranum uncinatum.* E. Bot. 2261. E.)

B. PALUDO'SUM. Capsule very blunt, mouth wide: leaves bristle-shaped.

(*E. Bot.* 2551—*Musc. Brit.* xv. E.)—*Dill.* 49. 53.

Differs from *B. viridulum* in its brown capsules, and the leaves not curling when dry. Linn. Extremely small, only observable from its growing in a quantity together. *Leaves* minute, hair-like, but expanding. *Fruit-stalk* terminal, two or three lines long. *Capsules* egg-shaped. *Mouth* wide, minutely fringed. *Veil* slender, upright. Differs from *B. virens* in the darker green of its leaves, their being more slender, not curling when dry, and in having smaller capsules. Weis. *Leaves* very slender, scarce sensibly broad, soft, dull, green. *Capsules*, lid deciduous, leaving large opening for the size of the capsule. Dill. Differs from *B. viridulum* in the *leaves*, which, though bristle-shaped, are broad at the base, the mid-rib only visible in the broader part; *fruit-stalk* twisting when moistened; *capsule* egg-shaped, with an orifice equal to its greatest diameter. Grif.

(DIMINUTIVE THREAD-MOSS. *Grimmia pusilla.* Roth. Sm. *Weissia pusilla.* Hedw. Hook. E.) In sandy marshes and turfy ground in Yorkshire. Richardson, in Dill. 389. Moist rocks, and sometimes decayed wood in damp shady places. Lightfoot. On stones and roots of trees in damp situations in Garn dingle, Denbighshire, particularly on sand stones by the petrifying-spring. Mr. Griffith. A. March—May.

(In Musc. Brit. some doubt is entertained whether the true plant of this species has been found by any one but Mr. Templeton, (on limestone rocks in the neighbourhood of Belfast,) and with which the Dillenian figures do not accord. E.)

(*Dicranum Celsii.* Hedw. Fl. Brit. E.) On rocks on the Highland mountains. Dickson.

B. RI'GIDUM. Capsules oblong: shoot very short: edges of the leaves turned in.

Hedw. Stirp. i. 25—(*Musc. Brit.* xii. E.)—*E. Bot.* 180—*Dill.* 49. 55.

Stems very short. *Leaves* very entire, bluntish, flat above, convex underneath, naked. *Fruit-stalk* terminal, solitary, upright, half an inch long, purple. *Veil* conical, pale. *Capsules* fringed, smooth. *Lid* taper-pointed, purple at the base, half as long as the capsule. Huds. *Fertile* plant always taller and slenderer than the *barren* plant, but both of them short and thick. *Fringe* red, composed of thirty-two long slender filaments, spirally twisted together when moist. Hedw. *Leaves* stiff, like those of heath. Dill.

(RIGID THREAD-MOSS. *B. rigidum.* Huds. *Barbula rigida.* Hedw. *Tortula rigida.* Sw. Turn. Sm. Hook. Grev. Moist rocks near Wigmore, Herefordshire. Brown, in Dill. On Ingleborough, Yorkshire. Hudson.

Thorpe, near Norwich. Sir J. E. Smith. (On a wall by the road side opposite Parson's Green. Mr. Steuart. Grev. Edin. E.) P. Nov.—July.

B. PAUCIFO'LIUM. Capsules oblong: lid taper-pointed: veil reaching half way round: leaves strap-spear-shaped.

Dicks. H. S.—(*Dicks.* 4. 11. 3—*E. Bot.* 2506—*Musc. Brit.* vii. E.)

Whole *plant* scarcely more than the eighth of an inch high, the smallest of this Genus which I have seen. *Leaves* three or four, when viewed through a magnifying glass strap-spear-shaped, ribbed underneath. *Fruit-stalk* yellowish, sometimes two from the same point. *Capsule* upright, oblong, somewhat cylindrical, brownish when ripe, with a swollen red ring. *Lid* taper-pointed, somewhat crooked, nearly as long as the capsule. *Veil* oblique, minute. *Fringe* toothed; teeth numerous, bent in. Differs from *B. paludosum* in the leaves not being bristle-shaped, and in the shape of the capsule. Dicks. (This species is remarkable in having two kinds of leaves, of which the outer and lower ones are much the shortest and broadly lanceolate, whilst the inner and uppermost are linear-lanceolate. Musc. Brit. E.)

(FEW-LEAVED THREAD-MOSS. *B. paucifolium.* Dicks. *Gymnostomum paucifolium.* E. Bot. *Dicranum cylindricum.* Fl. Brit. *Gymnostatum tenue.* Hedw. Hook. On sandstone rocks, rare. E.)

B. Capsules on fruit-stalks, upright.

(2) *Stem very short: rarely branched.*

(B. VIRIDIS'SIMUM. Leaves broadly lanceolate: capsule ovate: lid oblique, rostrate.

E. Bot. 1583—*Musc. Brit.* vi.

Stems scarcely an inch in height, of a pale yellow green. *Leaves* most beautifully dotted.

BRIGHT-GREEN THREAD-MOSS. *Gymnostomum viridissimum.* Sm. Hook. *Dicranum viridissimum.* Sm. Turn. with which Messrs. Hooker and Taylor also assimilate *Bryum Forsteri.* Dicks. With. E. Bot. 2225. Trees, principally in the south of England, rare in Scotland. Musc. Brit. E.)

B. FASCICULA'RE. Capsules roundish pear-shaped: mouth naked: shoots leafless below: leaves fasciculated, egg-spear-shaped, taper-pointed. Dicks.

Dicks. H. S. and Fasc. iii. 7. 5—(*Musc. Brit.* vii.—*E. Bot.* 1245. E.)

Roots strong, brown. *Shoots* nearly upright. *Leaves* toothed, twisted at the end; with a mid-rib. *Lid* very blunt. *Veil* tumid, contracted at the base. Dicks.

(TWISTED-LEAVED THREAD-MOSS. *Gymnostomum fasciculare.* Hedw. Sm. Hook. Barren sandy places. P.*

B. FLEXIFO'LIUM. Capsules egg-cylindrical, mouth with a membranous fringe: shoots nearly stemless: leaves waved, spear-shaped, serrated. Dicks.

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* (By some this minute plant is considered the *Bryum Ægypti*, of Hasselquist; abundant on the walls of Jerusalem; and therefore presumed to be "the Hyssop that springeth up out of the wall." (*Hyssopus Salomonis*, Linn. sub *Bryo truncatulo*, fid. Sm. E.)

Dicks. Fasc. iii. 7. 9—(*Musc. Brit.* xx.— *E. Bot.* 2193. E.)

From two to four lines high. *Leaves* crowded, upright, but expanding, acute, keeled, serrated upwards, yellow green, twisted when dry. *Fruit-stalk* terminal, near half an inch high, pale, yellow. *Capsule* cylindrical, but a little swollen at the base. *Lid* conical, blunt, rather thicker at the top. *Veil* awl-shaped.

(Waved-leaved Thread-moss. *Trichostomum flexifolium.* Sm. Brid. *Didymodon flexifolium.* Musc. Brit. E.) On barren sloping ground near Croydon. Dickson. Abundant on the moor, two miles from Buxton on the Manchester road. Dr. Greville. On Ben Ledi, and mountains between Loch Earn and Loch Tay. Mr. Arnott. Musc. Brit.

B. CONVOLU'TUM. Capsules cylindrical: involucrum-leaves blunt, rolled up so as to form a cylinder: leaves spear-shaped.

Dicks. H. S.—*Hedw. Stirp.* i. 32—(*Musc. Brit.* xii.—*E. Bot.* 2382. E.)—*Dill.* 48. 44—*Schmid.* 57. 5.

Grows in dense tufts, half an inch or more in height; branches issuing out of the thickened tops of the old shoots, which are stellated at the ends. *Leaves* loosely disposed, ending in hairs. *Fruit-stalks* from the last year's shoots, one inch long, encompassed at the base by an involucrum of awl-shaped hairy leaves. Weis. Sometimes with forked branches. *Leaves* very slender, hardly a quarter of a line broad at the base, very entire. *Involucrum* terminal, embracing closely the base of the fruit-stalk. *Capsule* cylindrical, a line long, hardly a quarter as broad. *Mouth* without a ring; fringe red. *Lid* slender, upright, awl-shaped. *Veil* pointed, smooth, thread-shaped, reaching but half way. Pol. Inner *involucrum-leaves* heart-shaped, blunt.

(Convoluted Thread-moss. *Tortula convoluta.* Sw. Sm. Hook. E.) *B. setaceum.* Huds 481. Lightf. 729. (*Mnium setaceum* of Linn. is a different species which has rigid bristle-shaped leaves.) Dicks. *Barbula convoluta.* Hedw. in the plate named *setacea.* Heaths, hedge banks, and walls, very common. A. March.

B. DEALBA'TUM. Capsules roundish, somewhat bent, toothed and fringed: leaves spear-shaped, acute, expanding. Dicks. ii. 8.

Dicks. 5. 3. *a. b. c.*—(*E. Bot.* 1571—*Musc Brit.* xxviii. E.)

Habit that of *B. trichoides,* from which it differs as follows. *Leaves* spear-shaped, mostly pale, under the microscope reticulated, pellucid, finely but obscurely serrated at the end. *Lid,* beak short. Dicks.

Pale-leaved Thread-moss. *Meesia dealbata.* Sw. Hedw. 41. 6-9. E.) Mountains in Scotland; on Ben Lawers.

B. EXTINCTO'RIUM. Capsules cylindrical, entirely covered by the bell-shaped veils: shoots simple: leaves spear-shaped: (veil entire at the base. E.)

Dicks. H. S.—(*E. Bot.* 558—*Musc. Brit.* xiii.—*Hedw. Stirp.* i. 18—*Fl. Dan.* 1001—*Dill.* 45. 8—*Vaill.* 26. 1.

Fruit-stalks terminal. *Capsule,* mouth not fringed. Neck. Grows thick together in patches, half an inch to one inch high; sometimes a little branched towards the top; very leafy, ending in roses *Fruit-stalks* not half an inch long, upright. *Capsules* cylindrical. *Lid* sharp-pointed. The veil covering the whole capsule and hanging down below it, distinguishes this from every other moss. Dill.

(Extinguisher Thread-moss. *Encalypta vulgaris.* Hedw. Turn. Sm. Hook. E.) *Leersia vulgaris.* Hedw. Grassy places in a sandy soil, dry heaths, and calcareous rocks. Castle walls, Bungay, Suffolk. Mr. Stone. Denbigh castle. Mr. Griffith. P. Oct.—Aug.

Var. 2. Veil cut at the base, (into a distinct fringe. E.)

(*E. Bot.* 1418—*Musc. Brit.* xiii. E.)—*Hedw. Stirp.* 1. 19; *Theor.* 9. 10 *to* 14, *the fructification; Hist.* ii. 5. 24. *a, the seeds*—*Fl. Dan.* 1001. 2—*Dill.* 45. 9.

Whole *plant* larger and more branched. *Capsule*, mouth fringed. *Veil* cut at the base into six segments; grey, bent inwards. Linn. Suec. n. 990. *Leaves* retaining their green colour when dry.

(*B. extinctorium* β. Linn. *Leersia ciliata.* Hedw. *Encalypta ciliata.* Hedw. Turn. Sm. Hook. Rocks about Ludlow Castle. Ripens its capsules in summer; the preceding variety in winter. Dill.
Early in the Spring to July. P.

(The authors of Musc. Brit. include under this latter plant,

E. ciliata a. concolor; leaves apiculate, their points of the same colour.

—— β. *pilifera;* leaves much acuminated, their points diaphanous, (teeth deciduous.) *Encalypta alpina.* E. Bot. 1419.

And nearly connected with the above is *E. rhaptocarpa*, supposed to differ principally in having a distinctly sulcated capsule, and in the more membranous ciliæ of the calyptra. Musc. Brit. Sup. ii. also Grev. Scot. Crypt. 163. E.)

B. viridʹulum. Capsules egg-shaped: leaves spear-shaped, taper-pointed, tiled, but expanding.

Dicks. H. S.—*Curt.* 132. 1—*Hedw. Stirp.* iii. 5—(*E. Bot.* 1367—*Musc. Brit.* xv. E.)—*Dill.* 48. 43—*Vaill.* 29. 5.

So small as hardly to be discernible if it did not grow in large patches. *Stems* one to three lines long, upright, seldom branched. *Leaves* very slender, sharp at the ends. *Fruit-stalks* terminating the last year's shoots, one or two in a shoot. *Capsules* egg-shaped; fringed at the mouth. *Lid* red, pointed. *Veil* pointed. Weis. *Fruit-stalks* green, changing to a pale yellow. *Capsules* from green to yellow brown, and shining. *Veil* slender, the colour of the capsule. *Lid* very short, reddish, its point bent. Dill. *Leaves* awl-shaped, quite straight, curled when dry. Dicks. *Fruit-stalk* not twisting when wet. *Capsules* red at the base and at the mouth, which is small and contracted. *Leaves* strap-awl-shaped, the mid-rib extending the whole length. Grif.

(Diminutive Green Thread-moss. *B. viridulum.* Huds. Lightf. Curt. Weis. *B. virens.* Dicks. Dill. Relh. *Weissia controversa.* Hedw. Sw. Hook. Grev. *Grimmia controversa.* Sm. Turn. E.) Boggy ground. Hedge banks. June.

B. truncaʹtulum. Capsules lopped: leaves flat, sharp-pointed.

Curt. 132—*Hedw. Stirp.* i. 5—(*E. Bot.* 1975—*Musc. Brit.* vii. E.)—*Dill.* 45. 7—*Vaill.* 26. 2—*Buxb.* ii. 2. 2—*Fl. Dan.* 537.

Capsules, when the lid is fallen off, appearing quite lopped, inversely egg-shaped, and yellowish red, therefore evidently distinct from *B. viridulum.* Linn. *Fruit-stalks* three or four lines long. *Capsule* without a ring. Neck. One of the least of the mosses; grows in patches. *Stem* three or four lines long, unbranched, ending in roses. *Lid* with a long slender point. *Veil* with a long taper point. Weis. *Sheathing involucrum* conical, lopped.

(LITTLE TRUNCATED THREAD-MOSS. *B. truncatulum.* Linn. Huds. With. Curt. Relh. *Gymnostomum truncatulum.* Hoffm. Turn. Sm. Hook. Grev. *G. truncatum.* Hedw. Sometimes confounded with *B. fasciculare,* as the Hyssop of Hasselquist. *G. intermedium.* Turn. Sm. E. Bot. 1976, is considered to differ only in the seta being a little longer, and the fruit more ovate. E.) Ditch banks, meadows, pastures, and heaths.
A. Sept.—Feb.

B. RUFES'CENS. Capsules egg-shaped, toothed: leaves strap-shaped, pellucid, flaccid, pointing one way. Dicks.

Dicks. iii. 8. 1—(*E. Bot.* 1216. E.)

Shoots nearly upright, unbranched. *Leaves* toothed, (and reticulated. E. Bot. E.) *Fruit-stalk* terminal. *Fringe* red, (of sixteen cloven teeth. E.) *Lid* conical, a little bent.

(Both this and the following are considered as varieties of *Dicranum varium,* in Musc. Brit. E.)

(RED FRINGED THREAD-MOSS. *Dicranum rufescens.* Turn. Sm. E.) Banks of muddy rivulets in Scotland. Dickson. (By the rivulet at the Hermitage, near Edinburgh. Smith. In wet fields near Forfar. Mr. G. Don.
A. Feb. E.)

B. CALLISTO'MUM. Capsules egg-urn-shaped: toothed, nearly stemless: leaves upright, strap-awl-shaped. Dicks.

Dicks. 7. 10.

Shoots nearly stemless, upright, leafy. *Leaves* upright, strap-awl-shaped, yellow green. *Fruit-stalk* brown; thicker upwards. *Capsule* egg-shaped, brown, when dry the upper part becomes twisted. *Fringe* with a ring, toothed; ring prominent; teeth half the length of the capsule; upright but approaching, flattish, red orange. *Lid* conical. *Veil* not observed.

(STEMLESS THREAD-MOSS. *Dicranum callistomum.* Sm. E.) Found by Mr. Dickson on barren rocks on Highland mountains in Scotland.

B. PAL'LIDUM. Capsules egg-cylindrical: leaves awl-shaped.

Hedw. Stirp. i. 27—*Dill.* 49. 57.

Stem short, naked at bottom, or with a few very short minute leaves. *Leaves* awl-shaped, mid-ribbed, very slender, rather pointing to one side. *Fruit-stalk* one to one and a half inch high, pale green or reddish. *Capsules* upright. *Veil* reaching but half way round, deciduous. *Lid* bluntly conical, somewhat bent.

(SLENDER-LEAVED THREAD-MOSS. E.) Specimens from J. W. Griffith, Esq. of Garn, who first found it on our island, growing on the sides of turbaries (peat holes) near Llyn Aled, Denbighshire.

B. Capsules on fruit-stalks, upright.

(3) *Stems trailing.*

B. HYPNOI'DES. Capsules egg-shaped: shoots ascending: branches lateral, short, fruit-bearing.

Var. 1. *Lanuginosum.* Shoot branched, lying down: leaves oblong, hair-pointed; capsules oblong; veils entire.

Hedw. Stirp. iii. 2—(*E. Bot.* 1348—*Musc. Brit.* xix. E.)—*Dill.* 47. 32—*H. Ox.* xv. 5, *row* 2. 7—*Hall. Hist.* 46. 4, *at* iii. *p.* 56.

Leaves a little toothed at the sides, but this most conspicuous in the dried plant. *Capsule* upright. *Mouth* fringed with sixteen teeth, hair-like, separate quite down to the base. Hedw. *Shoots* rigid, from three to twelve inches long; prostrate. *Branches* numerous, short, thicher than the main stem. *Leaves* slender, pale green, ending in a long grey hair. *Fruit-stalks* terminal, or nearly so; short, yellow. *Capsules* small, egg-shaped. *Lid* red, sharp-pointed. Dill. *Lid* regularly conical, but very taper, and about one-third the length of the capsule.

(Toothed Hoary Thread-moss. E.) *B. Hypnoides a.* Linn. ζ. Huds. *Trichostomum lanuginosum.* Hedw. (Sw. Turn. Sm. Hook. E.) On Snowdon and Glyder; Mendip Hills; Hills in Yorkshire. Dillenius. (On the top of the Sugar Loaf mountain, Monmouthshire, in very dense patches. Purton. On heaths in Norfolk. Rev. James Layton; in Musc. Brit. Autumn.

Var. 2. Leaves fasciculated, not closely set, spear-awl-shaped, mid-ribbed, doubled together, ending in a short whitish hair; curled when dry.

E. Bot. 2005—*Musc. Brit.* xix. E.)—*Dill.* 47. 28. A. *something resembles it, but that is described as hairless.*

Branched upwards. *Fruit-stalk* from one-fourth to three-fourths of an inch long, varying greatly in different specimens.

B. Hypnoides β. Linn. and Huds. (*Trichostomum fasciculare.* Turn. Sm. Hook. E.) On Snowdon. Dillenius and Griffith. Sometimes the branches are so short as to resemble bundles of leaves, and then the fruit-stalks are short in proportion. Dill. 47. 28. B. if furnished with hairs, would be a pretty good resemblance of it in this state.

Var. 3. Leaves fasciculated, egg-awl-shaped, mid-ribbed, keeled, pointed with a white hair.

From two to three inches long, trailing, branches and fruit-stalks longer than in var. 1. None of the figures exactly resemble it.

Var. 4. Leaves fasciculated, spear-awl-shaped, mid-ribbed, doubled together, hair-pointed, curled when dry.

Near two inches long. Less trailing than the preceding, but chiefly differing in the shape of the leaves, and being of a bright yellow green. (*B. lutescens.* Dicks.? E.)

Var. 5. Leaves fasciculated, spear-awl-shaped, mid-ribbed, not hair-pointed: fruit-stalks very short.

Specimen from Mr. Griffith, who thinks it ought to be considered as a distinct species; and in favour of this opinion we may observe, that all the preceding varieties have hair-pointed leaves, but this and the subsequent ones are not so. The stems more or less trailing, and the leaves growing in bundles are always sufficient to distinguish *B. Hypnoides* and its reputed varieties from *B. canescens*, whilst the presence or absence of that hoariness which is caused by the hairs at the points of the leaves, will at once discriminate the four first varieties of *B. Hypnoides* from the subsequent ones.

Var. 6. Leaves fasciculated. spear-awl-shaped, mid-ribbed, doubled together, curled when dry: lid not beaked.

Dill. 47. 30.

Leaves crowded, very small, yellowish or brownish green. *Fruit-stalk* from the upper branches, half an inch long. Dill. It forms a cushion on the rocks. Linn. In the specimens before me some plants are distinctly of the barren, and others of the fertile kind.

B. hypnoides δ. Huds. (*Trichostomum obtusum.* Sm. E.) On Snowdon. Dillenius and Mr. Griffith. Aug.

Var. 7. Shoots long, prostrate, leaves pointing one way, in bundles or distinct, awl-shaped, bent, very slender and fine, but not hair-pointed.

There is not any figure of this. The plant is brown green, four or five inches long, branches few, very short; fruit-stalk scarcely longer than the leaves. Shoot distinct, composed of a bundle of brown red fibres. Specimen from Mr. Dickson.

B. Capsules on fruit-stalks, upright.

(4) *Stems upright.*

a. Capsules roundish.

B. **RETICULA'TUM.** Capsules pear-shaped, toothed: leaves egg-shaped, serrated, reticulated. Dicks. ii. 4.

Dicks. 4. 6. *a. b.*—(*E. Bot.* 2507. E.)

Shoots upright. *Leaves* distant, rather pointed, of a remarkable net-work texture, transparent, serrated towards the end, below very entire. *Fruit-stalk* from the base of the plant. *Capsule* teeth bent in. Dicks.

(RETICULATED THREAD-MOSS. *B. reticulatum.* Dicks. *Splachnum reticulatum.* Sm. and assimilated with *S. Frœlichianum*, Musc. Brit. ix. by Hooker and Taylor, but considered distinct by Smith. E.) On Ben High, in the Highlands.

B. **PENNA'TUM.** Capsules very small: fruit-stalks terminal: shoot simple, upright, wing-cleft: leaves pointing two ways, spear-shaped very entire.

Hedw. Stirp. 1. 29—(*E. Bot.* 2213—*Musc. Brit.* viii. E.)—*Dicks.* 1. 4

Plant half an inch high; naked at bottom. *Barren* stems wing-cleft. *Fertile* stems, some star-like, some bearing capsules; very slender, bright green. *Leaves* distinct, egg-spear-shaped, pointing from two opposite lines. *Fruit-stalks* very slender, green, one-eighth of an inch long, rising out of an involucrum resembling that of the barren flower. *Capsule* upright, very small, green, roundish, but lopped when the lid has fallen off. *Veil* none observed. *Lid* very blunt, reddish. *Fringe* naked. Dicks. *Veil* falling off entire. Hedw.

(WING-CLEFT THREAD-MOSS. E.) *Mnium Osmundaceum.* Dicks. *Gymnostomum pennatum.* Hedw. (*G. Osmundaceum.* Sm. *Schistostega pennata.* Brid. Musc. Brit. Hollows in old hedge-banks, in a rich soil on the road from Zele to South Tawton, four miles from Okehampton: Mr. Newberry; (and in the same county, by the Rev. J. S. Tozer, near the village of Haberton, two miles from Totness; near Chelwill in the same parish; also near Meavy Parsonage; always on mouldering hedge-banks. Musc. Brit. We are also favoured by an unknown friend with the following station for this favourite Moss: April, 1826; It is now abundantly in fructification in Nottingham

Forest, where it grows on the roofs of the sandstone caverns, just beyond the Jews' burying-ground, on the west side of the Gallows Hill. E.) B. April—June.

B. verticilla'tum. Capsules small roundish: fruit-stalks twisted when dry: shoots all of the same height: leaves hair-pointed.

Dicks. H. S.—(*E. Bot.* 1258—*Musc. Brit.* xv. E.)—*Dill.* 47. 35.

Grows in dense tufts. *Stems* slender, adhering closely together, about an inch high; branched. *Leaves* hair-like, fine pale green, towards the bottom of the plant whitish. *Fruit-stalks* numerous, short, pale, terminal. *Capsules* small, roundish, greenish. *Lid* very small, red, pointed. Dill. Haller unites it with *B. æstivum*. Linn.

(Whorled Thread-moss. *Grimmia verticillata.* Turn. Sm. *Weissia verticillata.* Schwaegr. Musc. Brit. Grev. and *B. fasciculatum.* With. to Ed. 7. E.) In Yorkshire. Richardson, in Dill. On rocks near the sea, Bangor. Brewer, in Dill. (Auchtertool Linn, Fifeshire. Dr. Greville. E.) P. April—Aug.

B. pomifor'me. Capsules globular: lid flat: shoot branched: leaves strap-spear-shaped, tiled, but spreading: bristle-pointed.

Dicks. H. S.—(*Hook. Fl. Lond.*—*E. Bot.* 998—*Musc. Brit.* xxiii. E.)—*Dill.* 44. 1—*Fl. Dan.* 478—*Vail.* 24. 9 *and* 12—*Buxb.* v. *App. n.* 4—*H. Ox.* xv. 6, *row.* 4 *and* 6.

Leaves bristle-shaped. *Fruit-stalks* solitary, purplish below. *Capsules* globular. *Veil* very much pointed, very small, oblique. Linn. Grows thick together in broad patches. *Stems* about an inch high; the old ones branched, the young ones simple. *Leaves* very slender, serrated towards the ends. *Fruit-stalks* full half an inch long, from the ends of the younger shoots, one or more in a place. *Capsule* at first slender, when ripe globular. *Mouth* wide, fringed, the teeth turned inwards. *Veil* deciduous. Weis. and Dill. *Leaves* mid-ribbed.

(Apple Thread-moss. *Bartramia pomiformis.* Sw. Hedw. Sm. Turn. Hook. E. Bot. E.) Heaths, rocks, and banks. A. Feb.—April.

(In Musc. Brit. our first kind is described under var. *α minor;* stems shorter, leaves flexuose. To which is added var. *β major;* stems much lengthened out, branched; leaves longer; crisped; especially when dry. *Bartramia crispa.* Brid. Turn. E. Bot. 1526. E.)

B. macrocar'pon. Capsules roundish: fruit-stalks terminal: shoot branched: leaves expanding, spear-shaped, slender.

Dill. 47. 29; A. B. *the fresh,* C. *the dried plant*—*Fl. Dan.* 476—*Happ.* iii. 3.

Plant yellow green; much branched; leaves slender, curled. *Capsule* brown, beak very small. Dill. *Fruit-stalk* but little higher than the tops of the shoots. *Capsule* very small. *Lid* red, with a very slender needle-shaped point.

(Curled-leaved Thread-moss. E.) *Br. Hypnoides* γ. Huds. On Snowdon. Mr. Griffith.

B. pa'tens. Capsules egg-oblong, fringed: fruit-stalks very short: shoots nearly upright: branches expanding, rising to nearly the same height: leaves strap-spear-shaped.

Dick. 4. 8. *a. b.*—(*E. Bot.* 1950—*Musc. Brit.* xix. E.)

Shoots somewhat slanting, nearly cylindrical, tapering towards the base, very much branched. *Branches* unequal, rather pointed, somewhat higher than the fruit-stalks. *Leaves* tiled, pressed to, the points standing out, quite straight, strap-spear-shaped, pointed, channelled. *Fruit-stalks* from the sides of the uppermost branches, few, solitary, very short, often zigzag. *Capsules* rather pear-shaped, small. *Fringe* fringed. Dicks. *Capsules* egg-oblong, as expressed in the figure.

(Expanding Thread-moss. *Trichostomum patens.* Schwaeg. Hook. *Dicranum patens.* Sm. Also *Trichostomum obtusum,* of the latter author, according to Musc. Brit. which Smith considers synonymous with *B. Hypnoides* var. Huds. With. E.) On rocks in mountainous rivulets. On Ben Nevis, Scotland. Dickson. Rocks above the chapel at Gwydir, Carnarvonshire. Mr. Griffith.

B. STELLI'GERUM. Capsules semi-globular, naked: leaves strap-shaped, in star-like whorls. Dicks. ii. 3.

Dicks. 4. 4. a. b.

Shoots branched, star-like at the end. *Leaves* expanding, a little bowed back at the ends; somewhat whorled. *Fringe* naked. *Lid* flattish, the beak somewhat oblique; as long as the capsule. Dicks.

(Star Thread-moss. *Gymnostomum stelligerum.* Schrad. Sm. *G. curvirostrum.* Musc. Brit.? vid. *B. æstivum.* E.) Woods in the Highlands.

B. ACU'TUM. Capsules roundish: shoots branched, pointed: leaves bristle-shaped, upright.

(*E. Bot.* 1644—*Musc. Brit.* xiv.—*Fl. Dan.* 538. 2. E.)—*Hill.* 47. 34.

Slender, one inch high, branches two or three, sometimes more. *Leaves* dark green, hairy, sharp-pointed. *Fruit-stalks* short, when young terminal. *Veil* brownish. *Capsules* short, roundish. Dill. In moist situations the capsules are rather longer, and sometimes the fruit-stalks are bent like those of *B. fragile.* Griff.

(Pointed Thread-moss *B. acutum.* Dicks. *B. Splachnoides.* Dill. *Weissia acuta.* Hedw. 35. Hook. *Grimmia acuta.* Turn. Sm. E.) Snowdon, and mountains about Llanberris. Dillenius. On Ben Lomond, and sides of Highland mountains. Lightfoot. Crib y Ddescil. Mr. Griffith. Aug.—May. Dill. Oct—June. Lightf.

B. LATERA'LE. Capsules nearly globular, lateral: leaves bristle-shaped, pointing one way. Lightf.

Hedw. Stirp. ii. 40—(*E. Bot.* 997—*Musc. Brit.* xxiii. E.)—*Hall. Enum.* 3. 8, *at p.* 109. *Hist.* 46. 8, *at* iii. *p.* 56—*Hall. It. Helv.* ii. 1. 2. *in Opusc. p.* 300—*Fl. Dan.* 823. 1; *and* 538. 3.

Stems forming tufts, from one to three inches high; almost upright, purplish, but little branched; covered at the base with fox-coloured wool. *Leaves* numerous, very green, bristle-shaped, soft, long. *Fruit-stalks* upright, short, purple. *Veil* conical, sharp, pale, deciduous. *Capsules* fringed, tawny. *Lid* conical, very short, tawny. Huds. Barren and fertile flowers in the same involucrum. *Fruit-stalks* short, stiff; but bending by the weight of the capsule, fixed to the end of the last year's shoot, but the growth of the new shoot makes it appear lateral. Outer fringe of sixteen teeth. In *B. pomiforme,* the leaves are more equally tapering, and the fruit-stalks are longer.

(LATERAL THREAD-MOSS. *B. laterale.* Huds. Lightf. With. Dicks. Ehrh. *Bartramia Halleriana.* Hedw. Turn. Sm. Hook. E.) On the banks of the river Isla, Angus-shire. Mr. Brown; who assures me that it was first discovered in Scotland by Dr. Walker on Hartfell mountain near Moffat. E.) Boggy ground on the ascent to Crib y Ddescil, from Llanberris. About Llyn Idwell, in the ascent to Twll dû, in great abundance. Mr. Griffith. P. May—Sept.

B. Capsules on fruit-stalks, upright.

(4) *Stems upright.*

b. Capsules egg-shaped.

B. CIRRA'TUM. Capsules egg-oblong: lid taper-pointed: veil reaching but half-way: shoots branched: leaves strap-spear-shaped, mid-ribbed, acute.

(*E. Bot.* 2356—*Musc. Brit.* xv. E.)—*Vaill.* 24. 8—*Fl. Dan.* 538. 4.

Grows in large dense patches. *Fruit-stalks* from one half to one inch, the young ones terminal, the older form the forks of the branches. *Lid* reddish, pointed, very slender, readily falling off. *Mouth* with a short fringe. Weis.

(FRIZZLED THREAD-MOSS. *Grimmia cirrata.* Sm. *Weissia cirrata.* Hedw. Musc. Brit. The latter authority assimilates with the present species, *Grimmia Dicksoni.* Sm. E. Bot. 1420. *B. Dicksoni* of With. E.) *Mnium cirratum.* With. Ed. ii. and Gmelin doubts whether it ought not still to be considered as a *Mnium*, arranging with the *Dicrana* of Hedwig. Mr. Griffith observes, that *B. viridulum* at the foot of a hill gradually changed in the course of the ascent until it became *B. cirratum.* Woods, mountainous heaths, walls, and hedge-banks. P. March—July.

B. LANCEOLA'TUM. Capsules egg-oblong, toothed: shoots nearly upright: leaves spear-shaped, concave, taper-pointed.

Hedw. Stirp. ii. 23—(*E. Bot.* 1408—*Musc. Brit.* xiv. E.)

Stem upright, three or four lines high, rarely branched. *Leaves* the lower ones smaller than those above. *Lid,* beak generally bent. *Veil* pale-green to whitish, upright, splitting at the side.

(LANCEOLATE-LEAVED THREAD-MOSS. *B. lanceolatum.* Dicks. With. Relh. *Grimmia lanceolata.* Sm. *Leersia lanceolata.* Hedw. Ehrh. Dry heaths. Hedge-banks about Croydon. Spring and Autumn. P.

B. LINOI'DES. Capsules cylindrical, bearded: leaves distant, spear-shaped, roundish, but pointed. Dicks.

Dicks. iii. 8. 3.

Shoot upright, simple. *Leaves* expanding, pointed by the projecting of the mid-rib. *Fringe* twisted. *Veil* awl-shaped, twice the length of the capsule. (The authors of Musc. Brit. assimilate this plant with their *Tortula fallax*, xii. the larger specimens, with longer and sharper leaves than the other varieties. E.)

(FLAX-LEAVED THREAD-MOSS. *B. Linoides.* Dicks. With. Hull. Hedw. *Trichostomum Linoides.* Fl. Brit. not E. Bot. 2295, (fid. Musc. Brit.) which rather belongs to *B. trifarium.* E.) Pastures in Scotland. Dickson. (Gathered by Mr. Backhouse at the High Force, Teesdale; also in Weardale by Mr. Winch. E.)

B. POLYPHY'LLUM. Capsules egg-oblong, toothed: shoots very much branched: leaves crowded, spear-shaped: curled when dry.

(*E. Bot.* 1217—*Musc. Brit.* xix. E.)—*Dill.* 48. 41.

(*Veil* striated, at length torn at the edge. *Lid* awl-shaped. E.) Resembles the *B. cirratum* so much that they are not to be distinguished without maceration. That, however, is a more slender plant, has fewer fruit-stalks, and the capsules are paler. Dill. (The authors of Musc. Brit. observe: "this species may be easily known from other *Trichostoma* by the greater length and narrowness of its leaves, and by their remarkably crisped appearance when in a dry state. The capsules are generally crowded, and the teeth of the peristome connected at the base in filiform pairs."

(POLYPHYLLOUS THREAD-MOSS. *B. polyphyllum.* Dicks. With. Hull. *Dicranum polyphyllum.* Sm. *Trichostomum polyphyllum.* Schwaeg. Turn. Hook. *Trichostomum cirratum.* Sm. "Habitus *Dicrani polyphylli,* at major." Fl. Brit. Rocks and mountains. *B. cirratum* β. Huds. Autumn.

Ray mentions a var. with much smaller leaves, which is *B. cirratum* γ. Huds.

B. CANES'CENS. Capsules egg-oblong: leaves crowded, spear-shaped, bent back, white-haired at the ends.

Hedw. Stirp. iii. 3—(*E. Bot.* 2534—*Musc. Brit.* xix.—*Vaill.* 26. 14—*Dill.* 47. 27. *D, E, F.*

Stem upright when young, afterwards declining, and sending out a few branches of various lengths. *Leaves* spear-shaped, keeled, pressed to when dry. *Fruit-stalk* straight, three-fourths of an inch in height. *Capsule* oblong-egg-shaped. *Lid* a slender cone. *Mouth* fringed with sixteen long, hair-like teeth, divided down to the base. *Veil* slender, long, ragged at the bottom. *Fruit-stalks* lateral. Hedw.

(COMMON HOARY THREAD-MOSS. E.) *Bryum Hypnoidês* β. Fl. Suec. *Trichostomum canescens.* Hedw. Stirp. iii. p. 5. (Turn. Sm. Hook. Grev. *T. Ericoides* of authors, E. Bot. 1991, and identified in Fl. Brit. with *B. Hypnoides.* Linn. Huds. With.) "has somewhat of a pinnated appearance, arising from its numerous very short branches; but in the form of its leaves, capsule, and peristome, it perfectly accords with *T. canescens.*" Musc. Brit. E.) Differs from *B. Hypnoides* in its upright stem, its leaves being very slightly serrated only at the ends, and in its longer fruit-stalk. Hedw. When moist and growing, yellowish green, when dry woolly, from the number of hairs which terminate the leaves. Dill.

Common in dry, high, barren, sandy places. Feb.—March. P.

Var. 2. Shoots simple, or but little branched.

Dill. 47. 27. *A, B, C.*

About an inch and a half high. *Fruit-stalk* lateral. *Capsules* upright, egg-cylindrical. *Leaves* spear-shaped, slender, keeled, hair-pointed; hairs grey and bent inwards when dry.

Specimen from Mr. Griffith, accompanied by others of a stunted growth, on bleak rocks, not half an inch high, and very much crowded with leaves.

Var. 3. Leaves spear-awl-shaped, mid-ribbed; shoots branched.

Dill. 47. 29.

This was considered by Hudson as a variety of *B. Hypnoides;* but though the shortness of the fruit-stalks favours that opinion, the leaves being equally distributed, not fasciculated, and the want of trailing shoots, induce me to place it here.

B. Hypnoides γ. Huds. On some stones forming a circular wall on the summit of Snowdon. Aug.

B. ÆSTI'VUM. Capsules urn-shaped: fruit-stalks axillary: leaves spear-awl-shaped, without a mid-rib, doubled together.

Dill. 47. 36.

This Moss adheres together when dry, as it doubtless does when wet, like a *Conferva;* and when dry, preserves its beautiful blue green colour. It consists of thread like shoots crowded with very slender leaves, but dipped in water so that the shoots may separate, they appear but little branched, and the leaves seem less numerous. Dill. In some specimens now before me the fine bluish green colour like that of a Cantharid is very striking. *Capsules* urn-shaped. *Fruit-stalks* about half an inch long. *Plant* one inch and a half high. *Leaves* not crowded, spear-shaped, but very slender without a mid-rib, doubled together.

(BLUE-GREEN THREAD-MOSS. *B. æstivum.* Linn. According to Smith *Gymnostomum curvirostrum.* Hedw. E. Bot. 2214, and Musc. Brit. vi., and also by the latter authors synonymized with *G. stelligerum.* Schrad. Sm. *G. luteolum.* Sm., and *Bryum stelligerum.* Dicks. E.) *B. æstivum* of Hudson is *B. capillaceum,* excluding the synonym of Dill. 47. 39. which is *B. brevifolium.* Marshy places. Richardson, in Dill. 375.

B. DICKSO'NI. Capsules egg-oblong, fringed: shoots branched: leaves strap-shaped, keeled, rather curled when dry. Dicks.

Dicks. 7. 7.

Shoots branched, branches expanding, nearly of one height. *Leaves* upright scattered, strap-shaped, keeled, dark green, those at the end forming a star; curled when dry. *Capsules* yellowish. *Mouth* red; ring slender, teeth short, upright, red. *Lid* with a long slanting beak. *Veil* slender. Dicks. *Leaves* very slender, strap-spear-shaped, with a mid-rib the whole length. *Fruit-stalk* hardly half an inch high.

(DICKSON'S THREAD-MOSS. In Musc. Brit. we find this plant (E. Bot. 1420,) included under *Weissia cirrata, B. cirratum.* With. E.) On rotten wood and decayed trunks of trees. On a moist rock by the petrifying spring in Garn dingle, near Denbigh; and Wet rocks of Crib y Ddescil. Mr. Griffith.

B. TRIFA'RIUM. Capsules egg-oblong: mouth bearded: shoots seldom branched: leaves spear-awl-shaped, expanding. Dicks.

Hedw. Stirp. ii. 28—(*E. Bot.* 1707—*Musc. Brit.* xx. E.)

Scarcely half an inch high, unbranched, upright. *Lower leaves* smaller, colourless, : upper ones larger, broad at the base, and keeled, awl-shaped at the end, pointing three ways. *Capsule* egg-cylindrical. *Lid* conical, bent.

(THREE-ROWED THREAD-MOSS. *B. trifarium.* Dicks. With. Hull. Abbot. *Didymodon trifarium.* Sw. Hook. *Trichostomum trifarium.* Sm.

in Musc. Brit. E. Bot. 2295, *T. linoides* is also considered to represent this species. E.) Barren hills, and moist banks. E.) P.

B. CRIS'PUM. Capsules egg-shaped: fruit-stalks thicker at the top: leaves strap-shaped, broadest at the base, crowded, curled when dry.

Hedw. Stirp. ii. 35—(*E. Bot.* 996—*Musc. Brit.* xxi. E.)—*Dill.* 55. 11—*Pet. Mus. f.* 25—*Vaill.* 27. 9.

In dense tufts, so close, that the under parts decay. About one inch high, branched. *Barren* flowers in the bosom of the leaves. *Sheath* scarlet. *Fruit-stalks* terminal, short, straightish, thickening at the top so as to coincide with the pear-shaped capsule. *Capsule* from the above circumstance appearing pear-shaped, but it is really globular egg-shaped. *Lid* with a straight short beak. *Ring* none. *Fringe* double, sixteen teeth in each. *Veil* pyramidal, hairy. Hedw. *Capsule* when old with eight longitudinal streaks, in each of which lies concealed a pair of teeth belonging to the outer fringe after it has been bent back. When the seed has escaped, it contracts in the middle part. Inner fringe eight white hairs, the points of which unite in the centre. Outer fringe eight teeth, each of which at length splits into two. Grif (A beautiful species; sometimes very minute. E.)

CURLED THREAD-MOSS. *B. striatum* δ. Linn. E.) *Orthotrichum crispum.* Hedw. Sm. Hook. Grev. E.) Trunks of trees; (more rarely on walls. E.) Flowers in spring. Capsules ripen in May or June.

B. VAGINA'LE. Capsules egg-shaped, toothed: shoots rather serpentine: leaves hair-like but sheathing the base. Dicks.

Hedw. Stirp. ii. 33—(*E. Bot.* 1151—*Musc. Brit.* xvii. E.)

Near half an inch high, rather waved, upright. *Leaves* serpentine, mostly pointing one way. *Beak* slender, straight. (*Fringe* red of sixteen cloven flat teeth. E. Bot. E.) *Capsules* urn-shaped.

(SHEATHING THREAD-MOSS. *Dicranum crispum.* Hedw. Turn. Sm. Hook. E.) Bogs in Scotland. Dickson. (Said to have been found also by John Templeton, Esq., of Orange Grove, near Belfast, on moist banks of the Maryburn River, Ireland. E. Bot. E.) P.

B. WEISS'IA. Capsules egg-oblong, with a ring, fringed: leaves pointing one way, strap-awl-shaped, stiff. Dicks.

Hedw. Stirp. 1. 8—(*E. Bot.* 1899—*Musc. Brit.* xx. E.)

Stem upright. *Leaves* awl-shaped, but broad and sheathing at the base, rigid, not curling up when dry. *Involucrum* sheathing. *Fruit-stalk* terminal, always longer than the stem, nearly upright. *Veil* slender, upright. *Lid* a blunt cone. *Fringe* single, of sixteen teeth.

(CURVED-LEAVED THREAD-MOSS. E.) *Weissia heteromalla.* Hedw. (*Grimmia heteromalla.* Sm. *Didymodon heteromallum.* Musc. Brit. Hook. Grev. E.) Woods and sandy places. May—June.

B. HYPERBO'REUM. Capsules egg-shaped, fruit-stalks short: leaves stiff, hair-like, crowded. Gun.

(*E. Bot.* 2552. E.)—*Fl. Dan.* 538. 1.

Full half an inch high. *Capsules* but little raised above the foliage. *Beak* conical, slanting.

(Northern Thread-moss. *Dicranum hyperboreum.* E. Bot. E.) Rocks on Ben Nevis. Dickson.

B. Capsules on fruit-stalks, upright.

(4) *Stems upright.*

c. Capsules oblong.

B. recurviros'trum. Capsules oblong, slender: beak bent: leaves spear-shaped, tiled, expanding.

Hedw. Stirp. i. 7—(*E. Bot.* 1438—*Musc. Brit.* xiv. E.)—*Dill.* 48. 45.

Stem upright, not branched, about half an inch high. *Fruit-stalk* upright, generally terminating the old stem. *Veil* long, conical, crooked. *Lid* convex, beak straight whilst under the veil, afterwards crooked, but in a direction opposite to the bend of the veil. Hedw. *Stem* sometimes branched. (See fig. Dill.) *Leaves* very slender, keeled, upper ones the longest. *Fruit-stalks* red, half an inch high, or more. *Capsules* and *lid* red. Dill.

(Curved-beaked Thread-moss. E.) *Weissia recurvirostra.* Hedw. (*Weissia curvirostra.* Musc. Brit. Hook. Grev. *Grimmia recurvirostra.* Sm. E.) *B. curvirostrum.* Dicks., and With. Ed. ii. Woods in dryish places. Sandy stony places, interwoven with the grass. (In Patterdale, Cumberland. Mr. Winch. E.) P. Aug.

B. barba'tum. Capsules oblong, slender: lid taper-pointed, slanting: fruit-stalks lateral: leaves spear-shaped, acute, the upper ones expanding.

Curt 274—(*E. Bot.* 2391. E.)—*Dill.* 48. 48.

Grows in tufts, half an inch high, somewhat branched. *Leaves* spear-shaped, pointed. *Fruit-stalks* half an inch or more from the base or the middle of the branch, but never terminal. *Capsules* slender. *Veil* long. *Lid* long, slender, conical. *Fringe* orange-coloured or scarlet, twisted like a screw. Curt. (The 45th pl. of Dillenius is referred to by mistake in the observations of Mr. Curtis.) *Branches* of equal thickness, sent off from the lower part of the plant. Dill.

(The authors of Musc. Brit. have reduced this, with several others, to *B. unguiculatum*: but Curtis observes, "we are convinced, from repeated observations, that it is a species perfectly distinct. It approaches very near to *B. imberbe* and *unguiculatum.* From the former it differs in having the antheræ or capsules terminated by long, twisted ciliæ, and in having the peduncles always proceeding from the base of the surculus; this last character also strikingly distinguishes it from *B. unguiculatum.*"

(Bearded Lateral Thread-moss. *B. barbatum.* Curt. With. Hull. Relh. *Tortula barbata.* Sm. E.) On walls. P. Dec.—Feb.

B. imber'be. Capsules oblong: beak slanting: leaves slender, spear-shaped, keeled, bent outwards.

(*E. Bot.* 2329. E.)—*Dill.* 48. 46.

Fruit-stalks upright, solitary, terminating and lateral, half an inch long. *Capsules* cylindrical, one line long, deep saffron-coloured, blackish at the base. Web. *Fringe* long. Hal. Not an inch high, upright, unbranched at first, but every year sending out branches after the flowering season. *Leaves* broad at the base, and keeled. *Barren* flower terminal. Hedw. Grows in dense tufts. *Stems* slender, half to one inch high, dividing into branches. *Leaves* very slender, pale green, upper leaves bent back. Dill.

(Deciduous Thread-moss. *B. imberbe.* Linn. Huds. With. *Tortula imberbis.* Sm. E.) Sandy heaths, ditch-banks, and walls.
A. March—April.

B. **unguicula'tum.** Capsules oblong: lid taper-pointed, slanting: leaves strap-spear-shaped, keeled. Huds.

Dicks. H. S.—(*E. Bot.* 2316—*Musc. Brit.* xii. E.)—*Dill.* 48. 47—*Buxb.* ii. 2. 9.

Shoots forming patches about half an inch high; sometimes branched. *Leaves* open, near a line in length and a quarter in breadth. *Fruit-stalks* terminal. *Veil* smooth, reaching but half-way down the capsule. Pol. *Leaves* green, keeled, opake. *Capsules* oblong, thickest at the base, green, changing to brown. Dill.

(Bird's-claw Thread-moss. *Tortula unguiculata.* Sm. Hook. *Barbula unguiculata.* Hedw. Dill., in which also Drs. Hooker and Taylor comprehend *Tortula mucronulata,* (*B. mucronulatum.* Dicks. With. E. Bot. 1299. *T. aristata.* E. Bot. 2393. *T. barbata.* E. Bot. 2391. *T. humilis.* E. Bot. 1663. *T. apiculata.* E. Bot. 2494; and *T. ericetorum.* E. Bot. 2495. (*B. ericetorum.* With. Dill. 45. 13.) "We are led to include so great a number of synonyms under the above species from a careful examination of the descriptions and figures, as well as of authentic specimens. It is a plant which, growing in almost every variety of soil and situation, is subject to alter considerably in appearance. The form of the leaf, however, we find to be tolerably constant." Musc. Brit. E.) Walls and sandy places; (banks and hedges, frequent. E.)
A. March—April.

B. **tortuo'sum.** Capsules cylindrical: lid beaked: shoots branched: leaves spear-strap-shaped, serrated, waved, curled when dry.

(*E Bot.* 1709—*Musc. Brit.* xii. E.)—*Dill.* 48. 40—*Hall. Enum.* 4. 2, *at p.* 118, *Hist.* 45. 2, *at* ii. *p.* 41—*Fl. Dan.* 880. 1—*Scheuch. It.* ii. 19. 5—*Pet. Gaz.* 65. 8.

Grows in dense crip patches. *Shoots* upright, adhering together. *Leaves* a line or one and a half line long. *Fruit-stalks* from the forks of the branches, straight, three to seven lines long, closely clasped at the base by the involucrum. *Capsules* cylindrical, smooth. *Ring* none. *Mouth* fringed. *Lid* awl-shaped, straight. *Veil* smooth, extending but half-way down. Pol. One to one and a half inch high, somewhat branched. *Leaves* very numerous, slender, crooked, curled when dry, fine green, dull yellow when old. *Veil* slender, pale green, changing to brown. *Capsules* nut-coloured when ripe. Dill. (The widely serrated leaves are curiously hygrometrical, as may be observed under the microscope after maceration. Mr. Oade Roberts.

Twisted Thread-moss. *Tortula tortuosa.* Hedw. Sm. Turn. Hook. Grev. Musc. Brit. *Barbula tortuosa.* Schwaegr. Heaths, rocks on mountains, and woods. On a bushy hill half a mile from Garn, called Coed Mowr. Mr. Griffith. (Ebworth wood, near Painswick. Mr. O. Roberts. E.)
P. Aug.—Nov.

B. FLAVES'CENS. Capsules cylindrical, fringed: shoots mostly simple: leaves spear-strap-shaped, keeled. Dicks. ii. 4.

(*E. Bot.* 2263.—*Musc. Brit.* xvii. E.)—*Dicks.* 4. 5. *a. b.*

Shoots nearly upright.. *Leaves* between upright and open, yellowish, the points when dry twisted. Dicks. (*Stems* perennial, two or three inches tall, simple or branched, leafy, smooth, except about the bottom, where they are a little downy with rusty fibres. *Leaves* linear-lanceolate, acute, keeled, single-ribbed, spreading, entire, except a few occasional teeth near the tip. *Fruit-stalks* few, half an inch high. *Capsule* erect, top-shaped. E. Bot.

Supposed to be distinct from *B. flavescens.* Scop.

Yellowish Thread-moss. *Dicranum flavescens.* Sm. Hook. Musc. Brit. On wet sand under the banks of rocky rivers. In the dingle through which the stream is conveyed to Beaumaris mills. Welsh Bot.* Bogs in Yorkshire, and in Scotland. E.)

B. BREVIFO'LIUM. Capsules oblong, tapering, imperfectly fringed: leaves crowded, strap-shaped, keeled. Dicks. ii. 4.

(*E. Bot.* 2453—*Musc. Brit. Sup.* ii. E.)—*Dill.* 47. 39.

Slender, but little branched. *Leaves* dark green, very narrow and short. *Fruit-stalks* terminating the new shoots, short. *Capsules* oblong, small, dark brown. Dill. (Some Botanists conceive this not to be essentially distinct from *Tortula fallax,* but its leaves are in general far more rigid, more erect, and very straight; though perhaps var. *B. viridis,* of Musc. Brit. may scarcely be discriminated from that species. E.)

(Short-leaved Thread-moss. *Tortula brevifolia.* Sm. *T. gracilis.* Hook. Grev. *Barbula gracilis.* Schwaegr. *B. brevifolia.* Brid, E.) Bogs in Yorkshire and in Scotland. (On the moors near Blanchland, Northumberland. Mr. Winch. E.)

B. FLAGELLA'RE. Capsules cylindrical, toothed: shoots branched, waved: leaves awl-shaped, channelled, pointing one way. Dicks.

(*E. Bot.* 1977—*Musc. Brit.* xviii. E.)—*Hedw. Stirp.* iii. 1.

Fruit-stalk very slender. *Capsule* cylindrical, upright. *Lid* long, awl-shaped, bent. *Veil* splitting at the side, whitish, deciduous.

(Slender-branched Thread-moss. *Dicranum flagellare.* Hedw. Sm. *D. Scottianum.* Turn. Sm. Hook. *D. montanum.* Hedw. Sm. Rocks in mountainous districts. E.) P.

B. CAPILLA'CEUM. Capsules oblong: leaves in two rows, bristle-shaped, somewhat sheathing at the base.

Hedw. Stirp. ii. 26—(*E. Bot.* 1152—*Musc. Brit.* xx. E.)—*Fl. Dan.* 1000. 1—*Dicks.* 1. 6—*Hall. Enum.* 4. 1, *at p.* 118. *Hist.* 45. 1, *at* iii. *p.* 41.

Capsules oblong. *Leaves* expanding, bristle-shaped. Huds. Differs from *B. heteromallum* in its open leaves, and the shape of its capsules; from *B. flexuosum* in its fruit-stalks slender, quite straight, not zigzag, and in the smallness of its capsules. Dicks. *Stem* undivided, upright, half an inch high. *Leaves* in two rows, alternate. *Barren* and *fertile flowers* together, terminal. *Fruit-stalks* half an inch to one inch long. *Veil* opening at the side. *Capsules* cylindrical. *Lid* short, conical. *Mouth*, fringe single, teeth in pairs. Hedw. *Stalks* compressed, jointed. Grif.

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* (The Rev. Hugh Davies makes frequent mention of this dingle, (as a spot where "flowers of fairy brow,") and describes it to be a very prolific station deserving the particular attention of Botanists. E.)

(Fine-leaved Thread-moss. E.) *Swartzia capillacea.* Hedw. *B. æstivum.* Huds. 485, but not Dill. 47. 35. (*Trichostomum capillaceum.* Sm. *B. capillaceum.* Dicks. *Didymodon capillaceum.* Schrad. Brid. Hook. On rocks and moist mountainous situations: (more rarely on old walls. E.)

Var. 2. Leaves more crowded, shorter, roughish: capsules much smaller.

Not above half the height of the preceding. It assumes this habit when growing on rocks, or in dry situations, but still it preserves the jointed stalk, which is an unerring criterion of this species, Griff.; but which seems to have escaped the notice of Hedwig. Maceration in water renders these joints visible in a dried plant.

On the rocks above Cwn Ffynnon felen, near Llanberris abundantly. Mr. Griffith. P. April—June.

C. Capsules on fruit-stalks, leaning.

(1) *Stems none, or very short and unbranched.*

B. subula'tum. Capsules cylindrical: lid conical, acute: shoot very short, unbranched: leaves egg-shaped, bluntish.

Curt. 214—(*E. Bot.* 1101—*Musc. Brit.* xii. E.)—*Fl. Dan.* 1000. 2—*Vaill.* 25. 8—*Dill.* 45. 10—*Buxb.* i. 63. 2; ii. 2. 3 *and* 4.

Grows crowded together; but little branched, terminating in roses. *Capsules* cylindrical, slender, three or four lines long, becoming crooked when dry, ripe in summer. *Leaves* pellucid, pale green, with or without hairs. Weis. and Dill. *Plant* from three to five lines high. *Fruit-stalks* sometimes in pairs. *Veil* permanent, Scop. nearly as long as the capsule. (*Fruit-stalks* terminal, from half to one inch long. *Capsule lid* very long; the teeth twisted together when old into an oblong shape with a brush-like point. *Leaves* with a strong mid-rib, ending in a longish grey hair which falls off when the leaf is old. *Leaves* larger than those of any other British species, succulent, pellucid in their lower half.

Awl-shaped Thread-moss. *Tortula subulata.* Hedw. Turn. Sm. Hook. E.) Moist banks, woods, roofs, and walls. P. Jan.—May.

B. elonga'tum. Capsule long and tapering at the base: shoot upright: leaves strap-spear-shaped.

Hedw. Stirp. i. 36.

Hardly half an inch high, upright. *Barren* and *fertile flowers* terminal, but on different plants. *Fruit-stalk* straight, upright, but a little bent at the top by the weight of the capsule. *Capsule* oblong, leaning, its lower part a cellular substance, not containing seeds. *Lid* convex, beak short. *Mouth* with a double fringe, sixteen teeth in each.

(Elongated Thread-moss. *B. elongatum.* Dicks. With. Sm. *Pohlia elongata.* Hedw. Sw. On alpine rocks. Woods near Loch Ness, Scotland. On Ben Lawers with *B. Zierii.* Mr. Brown. May—Aug. E.)

C. Capsules on fruit-stalks, leaning.

(2) *Stems upright.*

B. STRUMIF'ERUM. Capsules nearly upright, pear-shaped, toothed: receptacle crooked: leaves strap-spear-shaped, mostly pointing one way.

Hedw. Stirp. ii. 32—(*E. Bot.* 2419—*Musc. Brit.* xvii. E.)

Capsules scored at the mouth, pear-shaped, but crooked, with an irregular knob at the base. *Beak* bent, fine red at the base.

(TUMID THREAD-MOSS. *B. strumiferum.* Dicks. *Fissidens strumifer.* Hedw. *Hypnum strumosum.* Gmcl. (*Dicranum strumiferum.* Ehrh. Sm. Hook. E.) Boggy meadows in Scotland. Dickson.

B. FAL'LAX. Capsules oblong, mouth bearded: shoots somewhat branched: leaves strap-spear-shaped, expanding, bent outwards. Dicks.

Hedw. Stirp. i. 24—(*E. Bot.* 1708—*Musc. Brit.* xii. E.)

Different from *B. imberbe,* which has the leaves strap-awl-shaped and straight, and the beak of the lid conical. *Barbula fallax.* Hedw. but not his synonyms. Dicks. Full half an inch high. *Leaves* curled when dry. *Lid* slender, nearly cylindrical, not quite straight.

(Hooker and Taylor do no admit *Tortula imberbis* to be distinct from the present species. Those authors observe: "we know of no plant of this genus that varies so much in the size of the stems as this; so that the dwarfish individuals, growing in dry fields, would scarcely be believed to be the same as those luxuriant specimens found on the moist banks of rivers. In the former situation, when about half an inch or somewhat more, in height, it agrees with *T. unguiculata.* Sm. when an inch and upwards, it becomes *T. fallax,* and when nearly two or three inches, it is *B. Lipoides.* Dicks." Musc. Brit.

(DECEPTIVE THREAD-MOSS. *Tortula fallax.* Sw. Turn. Sm. Hook. *Barbula fallax.* Hedw. E.) On walls, banks, and amongst grass.

B. CRISPA'TUM. Capsules fringed: shoots branched: leaves strap-shaped, chanelled, curled.

Dicks. 7. 4.

The size of *B. virens.* *Shoots* upright. *Leaves* upright, twisted, curled, a little toothed. *Calyx* slightly contracted in the middle, scored when dry. Dicks. *Capsules* fringed; fringe very long for the size of the plant. *Lid* depressed; beak long, slanting. *Leaves* pellucid, decurrent. Griff.

(CRISPED THREAD-MOSS. E.) Bogs in Scotland. On the rocks of Crib y Ddescil, Cwm Idwel, and Clogwyn y Garregog, near Llanberris. Mr. Griffith.

B. LONGIFO'LIUM. Capsules oblong, toothed: shoots elongated, rather leaning, sometimes branched: leaves hair-like, pointing one way. Dicks.

Hedw. Stirp. iii. 9—(*Musc. Brit.* xvi. E.)

An inch high or more, growing shoot upon shoot; delicate, feeble, but upright. *Leaves* sheathing at the base, very long and slender upwards, rather bent back and pointing one way. *Capsules* oblong, rather swollen on one side. *Lid* awl-shaped, slanting, reddish. *Veil* delicate, pale. (Easily distinguished by its long falcate *leaves*, furnished with a nerve occupying nearly their whole breadth. Musc. Brit. E.)

(Long-leaved Thread-moss. E.) *Dicranum longifolium.* Hedw. Banks of rivulets in the Highlands of Scotland. Dickson. Also in Ireland, where it was first found under dripping rocks at Glenmalur, Wicklow. Musc. Brit. E.)

B. TETRAGO'NUM. Capsules nearly upright, somewhat globular: shoots four-cornered, the younger tendril-like: leaves pressed to, strap-awl-shaped. Dicks. ii. 8.

Dicks. 4. 9. *a. b.*—(*E. Bot.* 1135—*Musc. Brit.* x. E.)

Full-grown shoots upright, with leaves disposed in four rows, blackish, yellowish, green above, sometimes sending out young shoots from the ends; *young shoots* flexuose, like a climbing plant, reddish. *Leaves* of the full-grown shoots very closely tiled, pressed to, upright, strap-shaped, awl-shaped towards the end; those of the shoots minute, egg-shaped, few. *Capsules* upright, somewhat oblique, mouth contracted. *Fringe* with a ring. Dicks. (The *fringe* is without doubt simple. The young slender zigzag shoots, figured and so minutely described by Dickson, are only produced when the plant is placed in a moist and somewhat warm situation, almost entirely secluded from light and air, neither are they peculiar to this species, for I have produced them in *Mnium purpureum*, &c. &c. merely by placing it in such situations as I have described; in all cases where these are produced, I have further remarked that they invariably point in that direction from whence the very small portion of light or air entered, as to the hinge of the botanical box when the experiment was made in it. Br. E.)

(Four-cornered Thread-moss. *Grimmia conostoma.* Sm. *Conostomum boreale.* Sw. Hook. Ben Lomond, Scotland. Also on Malghyrdy, Benteskerney, Ben Lawers, Lochain y Gar, and in great abundance on Craig Cailleach; on the bare ground; never found but at alpine heights. Mr. Brown. P. July—Oct. E.)

B. DAVIES'II. Capsules egg-shaped, lopped, toothed: shoots branched; leaves crowded, strap-shaped, curled when dry. Dicks.

Dicks. 7. 6—(*E. Bot.* 1281—*Musc. Brit.* xiii. E.)

Shoots nearly upright, branched, crowded with leaves. *Leaves* brown yellow when dry. *Fruit-stalks* terminating, short. *Capsule* brown yellow. *Fringe*, teeth short, bent inwards. *Lid* with a slender crooked beak. *Veil* distended, ragged at the bottom. Dicks.

(Least Extinguisher Thread-moss. *Glyphomitrion Daviesii.* Brid. *Grimmia Daviesii.* Turn. *Encalypta Daviesii.* E. Bot. *Griffithia Daviesii.* Br. in Linn. Tr. xii. Discovered by the Rev. Hugh Davies on the mountains of Wales. Rocks at Fairhead, and on the fallen columns of the Giants' Causeway, Ireland. Mr. Brown. E.)

B. INCLINA'TUM. Capsules egg-shaped, leaning: leaves hair-like spreading, sheathing. Dicks.

Hedw. Stirp. ii. 27—(*E. Bot.* 1824—*Musc. Brit.* xx. E.)

About one inch high, unbranched, upright. *Leaves* alternate, pointing two ways.

(Reclining-headed Thread-moss. E.) *Swartzia inclinata.* Hedw. (*Didymodon inclinatum.* Sw. Hook. *Grimmia inclinata.* Sm. E.) Turf bogs in Scotland. Dickson. (And north of Ireland. Mr. Brown. Considered by Drs. Taylor and Hooker as an extremely rare species. Mountains of Cunnamara in Ireland. Mr. J. M'ackay. On the sands of Barrie, Scotland. Mr. Drummond. Musc. Brit. P. June—Aug. E.)

B. rura'le. Capsules cylindrical: lids conical, acute: shoot branched: leaves reflexed, inversely egg-shaped, blunt, hair-pointed.

Hedw. Hist. i. 6. 28 *to* 32—(*E. Bot.* 2070—*Musc. Brit.* xii. E.)—*Dill.* 45. 12—*Vaill.* 25. 3—*H. Ox.* xv. 6, *row* 3. 1, *and row* 4. 2—*Buxb.* v. 44. 1.

Branched, one or two inches high, stellated at the ends. *Leaves* numerous, broad-spear-shaped, pointed. *Fruit-stalks* an inch high, surrounded by an involucrum at the base. *Capsules* cylindrical; mouth with a long fringe. *Lid* a long cone. Weis. Grows in dense and elevated tufts. *Stems* upright, branched, one or two inches high. *Leaves* crowded, standing open, fine yellowish green when wet, but dull greyish and brownish in dry seasons. Dill. (Among the largest of the *Tortulæ;* specimens from Craigcailleach, in Breadalbane, measuring seven or eight inches in length, but always barren. Mr. Lyell has found, growing on the trunks of trees at Rumsay, Hants, a state of this plant (also without fructification), in which the nerves were gemniferous. Musc. Brit. E.)

Great Hairy Thread-moss. *Tortula ruralis.* Sw. Turn. Sm. Hook. *Syntrichia ruralis.* Brid. Br. *Barbula ruralis.* Hedw. E.) Roofs both thatched and tiled, walls and trunks of trees. P. Dec.—April.*

B. audro'gynum. Capsules cylindrical: lids taper-pointed: fruit-stalks terminal: shoot branched, upright; leaves spear-shaped, rather expanding.

(*Schmid.* 56. 1—*E. Bot.* 1238—*Musc. Brit.* xxviii. E.)—*Fl. Dan.* 229—*Happ.* ii. *Mnium.* 5—*Dill.* 31. 1—*Vaill.* 29. 6—*Mich.* 59. 8. *H. K.* c.—*Neck. Meth.* 1. 4—*H. Ox.* xv. 7, *row* 2. 20.

Barren Flowers terminal, globular, on fruit-stalks only half the length of those bearing capsules. From one half to near two inches high, generally branched, nearly upright. *Leaves* not crowded, short, very narrow, pale green, pointed. Dill. (By some supposed to be nearly allied to *B.* (*Mnium*) *palustre.* E.)

(Narrow-leaved Thread-moss. *Mnium androgynum.* Linn. Woods, heaths, and walls, in dense patches. Roots of trees in moist sandy woods, dry shady banks by the sides of heaths. A. March—April.

B. undula'tum. Capsules nearly upright, oblong: fruit-stalks mostly solitary: leaves spear-shaped, keeled, waved, expanding, serrated.

Dicks. H. S.—*Curt.*—*Hedw. Stirp.* 1. 16—(*E. Bot.* 1220—*Musc. Brit.* x. E.)—*Dill.* 46. 18—*Vaill.* 26. 17—*H. Ox.* xv. 7, *row* 1*st.* 9.

Stem one to three inches, upright, unbranched. *Leaves,* the upper ones largest, viz. two or three lines long, and one broad. *Fruit-stalks* terminal, upright, one to two inches high sometimes two together. *Capsules* oblong, leaning, bent. *Lid* sharp-pointed, marked a scarlet circle. Weis. *Sheathing*, involucrum, pyramidal, its top closely embracing the fruit-stalk. *Veil* cylindrical, splitting one one side. *Capsules* cylindrical. *Lid* convex; beak very long. *Fringe* of thirty-two teeth, single. Hedw. *Stem* in part buried in the ground. *Leaves* deep green, thin, pellucid, very finely serrated, soon curling up when the plant is gathered. Dill. (*Leaves* strongly mid-ribbed, serrated and waved at the edge. It has much of the habit of a *Polytrichum*.

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* When this Moss extends itself over thatched buildings, the thatch, instead of lasting only about ten years, will endure for an age; Linnæus: (and may probably prove some little security against the liability to accidents from fire, which renders such covering very objectionable. E.)

Wavy-leaved Thread-moss. E.) *Polytrichum undulatum*. Hedw. (Sm. Hook. E.) Shady banks, woods about the roots of trees, and heaths.
P. Feb.—Aug.

B. linea're. Capsules nearly upright, oblong fringed: shoots upright, unbranched: leaves strap-spear-shaped, tiled, but expanding. Dicks.

(*Musc. Brit.* xx.—*E. Bot.* 1598. E.)—*Dicks.* iii. 8. 2.

In crowded patches. *Leaves* green, yellow. *Fruit-stalk* terminal, much thicker upwards. *Capsules* brown. *Fringe* long, red. *Beak* slanting, blunt.

(Linear Thread-moss. *Trichostomum lineare*. Sm. Brid. also, according to Musc. Brit. *T. rigidulum*. Turn. E. Bot. 2178. *Didymodon rigidulum*. Hedw. Hook. E.) Wet sandy banks in the south of Scotland. Dickson. (Walls and rocks. Not uncommmon in Ireland. Musc. Brit. E.)

D. Capsules on fruit-stalks, drooping.

[illegible]) *Stem none, or very short and unbranched.*

B. car'neum. Capsules somewhat globular: leaves alternate, acute.

Hedw. Stirp. 1. 20—(*E. Bot.* 360—*Musc. Brit.* xxix. E)—*Dill.* 50. 69—*Buxb.* ii. 2. 5 *and* 6—*Hall. Enum.* 4. 6, *at p.* 118. *Hist.* 45. 6, *at* iii. *p.* 41.

Shoots upright, single, or in tufts, dividing into several branches four or five lines long. *Leaves* half or one line long, half a line broad, not hairy at the end, very entire. *Fruit-stalks* terminating the shoots and the branches, three or four lines long. *Capsules* roundish, egg-shaped. *Ring* none. *Lid* short, bluntish. *Veil* smooth, reaching but half-way down. Poll.

(Flesh-coloured Thread-moss. E.) *B. delicatulum*. Hedw. Moist banks, pastures: wet drains. Summer. Dill.—March—April. Huds.

Var. 2. Capsules green. Branches and fruit-stalks longer. R. Syn. p. 102. n. 52.

Dill. 50. 69. G.

Yorkshire. Mr. Richardson.

(B. to'zeri. Stem short, simple, erect: leaves remote, spreading obovate, entire, cuspidate, margined, loosely reticulated, the nerve vanishing beyond the middle: capsule drooping, somewhat pear-shaped.

Grev. Scot. Crypt. 285.

Plant not more than half an inch in height. *Stem* naked below, very slender. *Leaves* not more than six or eight, remote, pale reddish colour;

the margin and nerve dark red. *Fruit-stalk* a quarter of an inch long. *Capsule* small, dark brown. To the naked eye strongly resembling *B. carneum,* but under the microscope, the leaves especially are abundantly distinct.

MINUTE DIAPHANOUS THREAD-MOSS. Discovered by the Rev. J. S. Tozer on clay banks by the river Dart, Devonshire, four miles above Totness. E.)

B. RECURVA'TUM. Capsules roundish: leaves bristle-shaped. Dicks. ii. 7.

(*Musc. Brit.* xv.—*E. Bot.* 1489. E.)—*Hedw. Stirp.* 1. 38—*Jacq. Misc.* ii. 12.

Original *stem* hardly half a line in height; very brittle when dry. *Leaves* expanding, lower ones spear-shaped. *Barren flowers* in the bosom of the leaves. *Fruit-stalks* terminal, at first straight, then arching downwards, becoming straighter again when old and dry. *Capsule* pear-shaped. *Lid* convex, beak slender, crooked. *Fringe* single, with sixteen teeth. *Veil* splitting at the side, bent like the beak of the lid.

(RECURVED THREAD-MOSS. *B. curvatum.* Dicks. *Grimmia recurvata.* Hedw. Sm. *Weissia recurvata.* Musc. Brit. Brid. E.) Barren grassy places. Calcareous rocks. Spring—Aut.

B. AU'REUM. Capsules pear-shaped: lid conical: shoot but little branched: leaves strap-shaped.

(*E. Bot.* 389. E.)—*Dill.* 50. 60—*Hedw. Stirp.* 1. 3—*Hall. Enum.* 4. 7, *at p.* 118, *Hist.* 45. 7, *at* iii. *p.* 41.

In this and in *M. crudum,* the stem is half as long as the fruit-stalk. Beautifully shining. *Leaves* of a greenish golden hue: Linn. Forming a firm turf. Distinguishable by its long slender leaves. *Fruit-stalks* an inch or more in length, terminating, purple shining, issuing from a brownish green involucrum. *Stellated* shoots with longer leaves. Weis. *Fruit-stalks* serpentine, pale red to golden yellow. *Capsules* pear-shaped, green, changing to yellow red. Dill.

(GOLDEN THREAD-MOSS. *B. aureum.* Huds. Schreb. Dicks. Turn. Sm. *B. Mnoides.* With. *B. pyriforme.* Musc. Brit. xxviii? E.) *Webera pyriformis.* Hedw. *Mnium pyriforme.* Linn. With. Ed. ii. Rocks in Nottingham Park. Berwyn Mountain, in the road between Bala and Llangunnry, and on Snowdon. Mr. Wood.
P. March—June, [and July. Mr. Wood.]

Var. 2. Capsules egg-cylindrical.

H. Ox. xv. 6, *f.* 20.

This plant has the foliage of *B. Hypnoides,* and the capsules of *B. sericeum.* The structure, however, of the fringe, accords with the former. It varies much in size, the shoots from half to one inch high, and the fruit-stalks from one to two inches.

Specimens from Mr. Griffith, who found it on turbaries about Llyn Aled, Denbighshire; also about Llanberris. Dillenius in Hist. Musc. inadvertently refers the above figure to his own 51. 72, but it is very different from that.

B. ARGEN'TEUM. Capsules egg-shaped: shoots cylindrical, tiled, smooth: leaves egg-spear-shaped, hair-pointed.

Dill. 50. 62—*Curt.* 166—(*E. Bot.* 1602—*Musc. Brit.* xxix. E.)—*Fl. Dan.* 880. 2—*Vaill.* 26. 3—*H. Ox.* xv. 6, *row the last*, 17.

Grows in patches, about half an inch high, dividing into cylindrical shoots two or three lines long. *Leaves* egg-spear-shaped, ending in hairs, but so pressed to the stem as hardly to be discernible to the naked eye. *Fruit-stalks* from the base of the shoots, near half an inch high. *Capsules* egg-shaped, upright when green, pendent when ripe. *Lid* short, blunt. *Mouth* fringed. *Veil* deciduous. Weis. In autumn and early in winter green, afterwards shining, silvery white, especially when dry, which circumstance alone is sufficient to distinguish it from all other Mosses. Dill.

(SILVERY THREAD-MOSS. E.) Sunny banks, walls, roofs, and rocks. P. Oct.—Feb.

Var. 2. Shoots greener. Leaves not hairy.

Dill. 50. 63.

Pale or darker green, sometimes shining. *Leaves* more crowded. *Capsule*, mouth not fringed.

On the gravel walks of the Oxford Physic Garden. Dill. Jan.—March.

B. ZIE'RII. Capsules club-shaped, long: shoots cylindrical: root-leaves expanding, longer than the stem-leaves. Dicks. ii. 8.

Dicks. 4. 10—(*E. Bot.* 1021—*Musc. Brit.* xxix. E.)

Shoots simple, upright, pointed, of a flesh-coloured whitish hue, green towards the end. *Leaves* closely tiled, pressed to, egg-shaped, pointed, ribless, transparent, the ends when dry reclining. *Root-leaves* surrounding the shoots, expanding, spear-strap-shaped, with a rib, taper-pointed, thrice as long as the rest. *Fruit-stalk* from the base of the plant, thrice as long as the shoots. *Capsule* depressed-pendent, when moist rather upright, on a crooked fruit-stalk, in the dry plant club-shaped, very much elongated and tapering at the base, the surface somewhat granulated. *Fringe* with many teeth. *Lid* short, pyramidal. *Veil* not observed. Dicks. (This species, so remarkable for the form of its capsule, resembles the preceding in colour, and in its large reticulation. Musc. Brit. E.)

(ZIERIAN THREAD-MOSS. E.) Moist banks on mountains, England, Scotland, and Wales.

B. NU'TANS. Capsules cylindrical: lids conical, dagger-pointed: shoot simple: leaves egg-spear-shaped, closing.

Hedw. Hist. i. 4. 16 *to* 19—(*E. Bot.* 1240—*Musc. Brit.* xxix. E.)—*Dill.* 50. 61—*Hedw. Stirp.* 1. 4.

About half an inch high. *Stamens* and *pistils* in the same flower. *Fruit-stalk* from one to two inches high. *Capsules* pendent, but after discharging their seeds upright. *Lid* convex, beak very short. *Mouth*, fringe double, each of sixteen teeth. Hedw. *Stems* short. *Lower-leaves* few, shrivelled, brown. *Upper-leaves* fine pale green. *Plants* without capsules, taller. Dill.

(SILKY PENDULOUS THREAD-MOSS. E.) *Webera nutans.* Hedw. *B. sericeum.* Huds. and With. Ed. 2. 3 and 4. (Walls and heaths, principally in mountainous districts. E.) P. March—Aug.

(**B. demis'sum.** Stem very short, branched: leaves ovate, cuspidato-acuminate, reticulated; the nerve excurrent: seta arched: theca curved and pyriform, pendulous.

Grev. Scot. Crypt. 92—*Musc. Brit. Sup.* vi.

Stems one to five lines long, with a few simple branches arising from their base. *Leaves* imbricated, yellowish green, reddish at the base; apex almost piliferous.

Pendulous Thread-moss. Discovered on Craig-calleach in Bredalbane, and the neighbouring mountains, by Dr. Hooker. Grev. E.)

D. Capsules on fruit-stalks, drooping.

(2) *Stems upright.*

B. nigri'tum. Capsules egg-shaped, toothed: shoots in bundles: leaves spear-shaped, keeled, acute. Dicks.

Hedw. Stirp. iii. 39—(*E. Bot.* 1825—*Musc. Brit.* xiv. E.)

Plant black green. *Fruit-stalk* black red. *Capsules* shining, black, brittle. *Lid* convex, with a small point.

(Dusky Thread-moss. E.) *Weissia nigrita.* Hedw. (Hook. *Grimmia nigrita.* Sm. E.) Boggy heaths, Scotland. Dickson. P.

B. pulvina'tum. Capsules roundish: veils minute: shoot branched: leaves oblong, mid-ribbed, hair-pointed.

(*Hook. Fl. Lond.*—*E. Bot.* 1728—*Musc. Brit.* xiii. E.)—*Dill.* 50. 65—*Happ.* iii. *Bryum.* 1—*Vaill.* 29. 2—*Pet. Gaz.* 95. 15—*H. Ox.* xv. 6, *row the last*, 21. *p.* 629.

Fruit-stalks bending down so that the capsules are buried in the foliage: but in some stages of the growth they are upright. Neck. In circular convex dense patches, about half an inch high. *Leaves*, the lower ones brown and without hairs. *Fruit-stalks* terminal, very short, at first upright, but as the capsule ripens bending down. *Mouth* toothed. *Veil* deciduous. *Lid* short, pointed. Weis.

(Grey-cushioned Thread-moss. *Grimmia pulvinata.* Sm. Hook. *Dicranum pulvinatum.* Sw. Turn. *Fissidens pulvinatus.* Hedw. E.) Walls, rocks, and roofs; one of the most common of all Mosses. March—April.

Var. 2. Capsules shorter and rounder; plant white with hoary hairs.

Specimen sent by Mr. Griffith. The uppermost leaves ending in very white hairs, as long or longer than themselves.

B. cubita'le. Capsules club-shaped, oblong: shoots and fruit-stalks bent: leaves arrow-shaped, points bordered. Dicks. ii. 9.

(*E. Bot.* 2551. E.)—*Dicks.* 5. 2.

The largest of all the Brya. *Shoots* somewhat branched, rather recumbent at the base. *Leaves* expanding, taper-pointed, with a thick mid-rib and reddish edge. *Fruit-stalk* terminal, very long, a little above the base with an elbow-like bend, a gold coloured reddish brown, brightly glittering. *Capsule* depressed and pendent, club-shaped, very long. *Fringe*, teeth numerous, upright. Dick. *Stems* trailing near the root, often three inches long. *Fruit-stalk* two to three inches long. Griff. *Leaves* sometimes bristle-pointed, but not always so. In the specimens of smaller growth the stems are nearly upright, and the bend at the base of the fruit-stalk is less observable.

(ELBOW-STALKED THREAD-MOSS. E.) On moist banks in the Scotch mountains, near Aberfeldy. On wet brows by the sides of rivulets in the neighbourhood of Snowdon, Mr. Griffith; who considers this plant as not specifically distinct from *B. alpinum*. (Hooker and Taylor arrange it under *B. ventricosum*, which latter they consider scarcely distinct from *B. alpinum*. E.)

B. ALPI'NUM. Capsules egg-cylindrical: fruit-stalk axillary: shoots branched: leaves tiled, spear-shaped, mid-ribbed, pointed, keeled.

(*E. Bot.* 1263—*Musc. Brit.* xxviii. E.)—*Dill.* 50. 64.

Grows densely compacted; variously branched; branches irregular in length. *Leaves* very numerous, oblong, keeled, straight, acute; opake, smooth, shining, purplish green, but in old plants dark purple below, dark red above. Barren branches taper at the end; those with fruit-stalks broader. *Fruit-stalks* an inch high, dark red purple, issuing from a large purple tubercle. *Veil* purplish. Dill.

(This species is best known by its deep shining purple colour, its rigid stems and leaves, which latter are straight, as well when dry as when moist. It is difficult, nevertheless, to form a specific character that will separate it from some varieties of *B. ventricosum*. Musc. Brit. E.)

(RED ALPINE THREAD-MOSS. On rocks in mountainous countries. E.)
P. April—June.

B. MARGINA'TUM. Capsules egg-cylindrical: lid beaked: leaves egg-spear-shaped, pointed, finely toothed, bordered. Dicks. ii. 9.

Dicks. 5. 1. *a. b.*—*E. Bot.* 1493—*Musc. Brit.* xxxi. E.)

Shoots mostly simple. *Leaves*, teeth remote, the mid-rib and edge red and thick. *Fruit-stalks* solitary. *Capsule* half egg-shaped. *Lid* conical. *Veil* awl-shaped. Dicks.

(Whole plant yellowish; when seen through a microscope the margin and nerve of the leaf appears of a deep blood colour, and the veil of a red hue, which renders this Moss very discernible at first sight. Musc. Brit.

BORDERED-THREAD-MOSS. *B. serratum.* Schrad. E.) *Mnium serratum.* Gmel. Pastures, Scotland; (north of England and Ireland. E.) woods, and shady banks.

HYP'NUM. *Fruit-stalk* from a lateral tubercle, fenced with scales: *Capsule*, outer fringe with sixteen teeth. Barr. Fl. a *bud*, generally on a different plant.

SUBDIVISIONS OF THE HYPNA.

A. (1) Unbranched, winged with leaves: capsules upright.
(2) Unbranched, winged with leaves: capsules leaning.
(3) Branched, branches winged with leaves: capsules leaning.
(4) Branched, branches winged with leaves: capsules drooping.

B. (1) Branches irregular: leaves irregular: capsules upright.
(2) Branches irregular: leaves irregular: capsules leaning.

C. (1) Shoots winged with branches: branch leaves imbricated: capsules upright.
(2) Shoots winged with branches: branch leaves imbricated: capsules leaning.
(3) Shoots winged with branches: branch leaves imbricated: capsules drooping.

D. (1) Leaves bent back: capsules upright.
(2) Leaves bent back: capsules leaning.

E. Plant shrub-like: branches fasciculated.

F. (1) Shoots nearly cylindrical: capsules upright.
(2) Shoots nearly cylindrical: capsules leaning.
(3) Shoots nearly cylindrical: capsules drooping.

G. (1) Shoots crowded: capsules upright.
(2) Shoots crowded: capsules leaning.

A. (1) *Plant unbranched, winged with leaves. Capsules upright.*

H. **BRYOI'DES.** Fruit-stalks terminal: capsules oblong: lid acute: leafits spear-shaped, acute.

Hedw. Stirp. iii. 29—(*E. Bot.* 625—*Musc. Brit.* xvi. E.)—*Dill.* 34. 1—*Vaill.* 24. 13—*Fl. Dan.* 473. 1—*H. Ox.* xv. 6, *row* 4. 11—*Buxb.* i. 64. 3.

Very small, but distinguished by its *capsules*, edged at the mouth with a deep red fringe. Linn. The smallest of the genus. *Shoots* two or three lines long. *Leafits* seven or eight pair. *Fruit-stalks* as long, or longer than the shoots, generally solitary. *Capsules* upright, egg-shaped. Weis. Many growing together as if from one root, but each plant has its separate rate, though sometimes two or three shoots spring from one root. *Shoots* not branched, short, reclining. *Leaves* green, not pellucid. *Capsules* small, upright, oblong, green. *Veil* very small, greenish. *Lid* scarlet. *Fruit-stalks* reddish, issuing from near the end of the shoots, and without any evident involucrum. Dill. Mid-rib of the leafits pellucid. Stackh.

(BRYUM-LIKE FEATHER-MOSS. E.) Shady places, woods, and ditch banks. A. Feb.—May.

(The arrangement of this species according to Musc. Brit. is as follows, *Dicranum bryoides.* Fruit-stalks terminal, perichætial leaves resembling the cauline ones.

a. Stem short, simple, capsule erect. *D. bryoides.* Sw. Sm. Turn. Hook. *Fissidens bryoides.* Hedw. *Hypnum bryoides.* Linn. *Dicranum viridulum.* Sw. Sm. E. Bot. 1368. *Bryum viridulum.* Linn. Dicks. i. 1. 5. Dill. 34. 1.

β. Stem elongated, somewhat branched, capsule erect. *Dicranum osmundioides.* Turn. Sm. E. Bot. 1662. *Hypnum asplenioides.* Dicks. 2. 5. 5, γ. Stem short, simple, capsule inclined. *Dicranum tamarindifolium*. Turn. Sm. E.)*

A. (2) *Unbranched, winged with leaves. Capsules leaning.*

H. DENTICULA'TUM. Seldom branched: fruit-stalks from the base: capsules cylindrical: lid blunt: leaves wedge-shaped, acute, in pairs, two-rowed.

(*E. Bot.* 1260—*Musc. Brit.* xxiv. E.)—*Dill.* 34. 5—*H. Ox.* xv. 6, *row* 1. 36—*Vaill.* 29. 8.

Leafits triangularly egg-shaped, hooked. Web. *Shoots* several, lying on the ground, half to one and a half inch long, seldom branched. *Leaves* in a double row on each side, soft, pellucid, shining, pale green, pointed and bent back towards the end. *Fruit-stalks* from the base of the shoots, reddish, an inch or more in length. *Capsules* oblong, straight, covered by the veil, which is of a straw colour; becoming bent as it approaches to maturity. *Lid* short. Dill.

(Drs. Hooker and Taylor discriminate var. *a. angustifolium*; leaves ovato-lanceolate, distant, quite plane: and chiefly among mountains, the less frequent.

Var. *β. obtusifolium*: leaves ovate, more or less obtuse, slightly concave.

These learned Muscologists also consider *H. Donnianum*, E. Bot. 1146, as merely an intermediate variety. E.)

(SHARP FERN-LIKE FEATHER-MOSS. E.) Woods, and moist shady places on the ground, and on trunks of trees. P. Mar.—April.

A. (3) *Branched: winged with leaves: capsules leaning.*

H. TRICHOMANOI'DES. Leaves oblong, blunt, hollowed on the under edge: capsules nearly cylindrical: beak bent.

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* (The authors of the work above cited mention having in their possession specimens of this little plant gathered by the adventurous Mungo Park in the interior of Africa. This might have been the identical species to whose exhilarating influence even his prolonged existance may be ascribed, as happily alluded to in the very interesting "Wonders of the Vegetable Kingdom." "The exhausted traveller found himself in the midst of a vast wilderness, surrounded by savage animals, and by men still more savage. He was five hundred miles from the nearest European settlement, and, considering his fate as certain, he thought that he had no alternative but to lie down and perish. At this moment the extraordinary beauty of a *small moss* irresistibly caught his eye, and, though the whole plant was not larger than the top of one of his fingers, he could not contemplate the delicate formation of its leaves and capsules without admiration. Can that Being, thought he, who planted, watered, and brought to perfection, in this obscure part of the world, a thing which appears of so small importance, look with unconcern upon the situation and sufferings of creatures formed after his own image? Thoughts like these would not allow him to despair. He started up, assured that relief was at hand, and he was not disappointed." Ed. 2. p. 148.

"Should fate command me to the farthest verge
Of the green earth, to distant barbarous climes,
Rivers unknown to song;

I cannot go
Where universal love not smiles around." E.)

(*E. Bot.* 1493—*Musc. Brit.* xxiv. E.)—*Dill.* 34. 8.

Leaves convex above, the ends reflexed. Dill. *Leaves* inversely egg-shaped, but somewhat hollowed on the under edge: very broad at the end, but with a minute point. *Fence* leaves spear-awl-shaped. *Capsules* nearly upright. (The remarkable curvature of the leaf, (scymitar-shaped,) is peculiar to this *Hypnum*. Musc. Brit. E.)

(BLUNT FERN-LIKE FEATHER-MOSS. *H. trichomanoides*. Schreb. Turn. Sm. Hook. E.) *H. complanatum* β. Huds. and With. Ed. ii. Ditches in woods, and roots of trees. P.

H. ADIANTOI'DES. Plant somewhat branched: fruit-stalks from the side: capsules nearly cylindrical: lid conical, short; leafits spear-shaped.

Dicks. H. S.—*Hedw. Stirp.* iii. 26—*E. Bot.* 264—*Musc. Brit.* xvi. E.)—*Dill.* 34. 3—*Vaill.* 28. 5—*Buxb.* ii. 1. 4.

Two or three inches long, straight; leafits twelve to sixteen pair. *Fruit-stalks* one inch high. Neck. Branched from the base. *Leaves* not pointed. *Capsules* reclining. *Lid* red. *Veil* as long as capsule. Scop. Upright, branched. *Leaves* shining. *Fruit-stalks* red, lateral. *Capsules* brownish, turning red. *Lid* scarlet, pointed. Dill. *Leafits* not serrated as mentioned by Leers. Griff. (Wahlenberg considers this a var. *H. taxifolium*. E.)

(GREATER FERN-LIKE FEATHER-MOSS. *Dicranum adiantoides*. Sw. Turn. Sm. Hook. E.) *Fissidens adiantoides*. Hedw. Bogs; moist heaths. P. Mar.—April.

H. SYLVAT'ICUM. Plant branched, trailing: fruit-stalks from the side: leafits acute.

Dill. 34. 6—(*Musc. Brit.* xxiv. E.)

Shoots branched. *Branches* undivided, few, not shining. *Fruit-stalks* lateral. *Lids* of the capsule pointed. Dill.

(WOOD FEATHER-MOSS. E.) Woods, at the roots of trees. Rivelston wood near Edinburgh. Sir J. E. Smith. Near Bungay, Suffolk. Mr. Stone. P. April—May.

H. COMPLANA'TUM. Plant flatted, much branched: capsules egg-shaped: lid conical: leaves in two rows, tiled, bluntly egg-shaped, doubled together.

(*E. Bot.* 1492—*Musc. Brit.* xxiv. E.)—*Dill.* 34. 7—*Vaill.* 23. 4; *and* 21. 17—*H. Ox.* xv. 5, *row* 2. 5, *and row* 3. 15.

Forming broad leafy strata on the trunks of trees. *Plant* from one to three or four inches long, creeping. *Leafits* alternate, in two rows, in the young shoots very closely crowded. *Fruit*-stalks half an inch high, numerous on the mid-rib, or from the fork of the branches. *Fence* large, hairy. *Capsule* egg-shaped. *Lid* conical, beaked. Weis. Two or three inches long. *Branches* opposite, or alternate. *Leaves* soft, pellucid, yellow green, shining. *Fence* scaly. *Veil* slander, whitish, crooked. Dill.

(FLAT FEATHER-MOSS. E.) Trunks of trees, common. P. March—April.

A. (4) *Branched, winged with leaves: capsules drooping.*

H. TAXIFO'LIUM. Unbranched: fruit-stalks from the base: capsules oblong: lid taper-pointed: leafits oblong, acute.

(*E. Bot.* 426—*Musc. Brit.* xvi. E.)—*Dill.* 34. 2—*Vaill.* 24. 11—*Fl. Dan.* 473. 2.

Leafits about twelve pair on each shoot, when young; more in the older shoots. *Capsules* nearly cylindrical, drooping, broadest at the mouth. *Veil* turned up at the end. Weis. *Leaves* spear-shaped, with a point at the end. Web. *Shoots* several from one root, not branched; dark green. *Fence* at the base of the shoots, composed of a few scales. *Lid* scarlet, beak pointed, crooked. *Veil* pale. Dill.

(YEW-LEAVED FEATHER-MOSS. *Fissidens taxifolius.* Hedw. *Dicranum taxifolium.* Sw. Turn. Sm. Hook. E.) Woods, hedges, and moist banks. Feb.—May.

H. ROTUNDIFO'LIUM. Branched, fruit-stalks lateral: capsules egg-shaped.

E. Bot. 2553—*Scop.* 62. 1333, *at* ii. *p.* 321.

Shoots slender, hardly one inch long, not numerous. *Leaves* thinly set. *Capsules* reddish; mouth with two rows of fringe. *Lid* with a slender beak. *Veil* white, chaffy. Scop.

(ROUND-LEAVED FEATHER-MOSS. *H. læte-virens.* E. Bot. E.) At the roots of trees, and on walls.

H. LU'CENS. Shoots branched; branches winged with leafits: fruit-stalks lateral: capsules drooping: leafits egg-shaped, dotted.

Dicks. H. S.—*Dill.* 34. 10—(*Schmid.* 57. 2—*E. Bot.* 1902—*Musc. Brit.* xxvii. E.)

Trailing. *Branches* brittle, blunt. *Leaves* egg-shaped, pointed, flat, shining as if wet with dew. *Fruit-stalks* one inch and a half long, lateral. *Capsules* nutant. Scop. *Shoots* about two inches long, sometimes branched. *Leaves* large, thin, soft, pellucid, pale green, placed alternately in two or three rows. *Capsules* small for the size of the plant, egg-shaped, more or less nutant, dark brown. *Lid* spit-pointed. *Veil* straight, sharp, whitish. Dill. (The shining aspect of this Moss is perhaps more likely than any other species to occasion that almost luminous appearance, remarked by the Rev. Palk Welland among the dark, cavernous rocks of Dartmoor. E.)*

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* (Since writing the above, we perceive a like phenomenon has been observed by Mr. J. E. Bowman in the shady recesses of Rowter rocks, a mile or two north of Winster, Derbyshire; as reported in Mag. Nat. Hist. vol. ii. p. 407, fig. 106. Mr. B. attributes this "golden-green light, perfectly phosphorescent, seen to the greatest advantage at the distance of a few yards, and losing its resplendent character when brought into the full light," to some minute vegetable furnished with a peculiar organisation. Nothing was visible upon the surface of the stone but a filmy irregular network of green, scarcely perceptible from its delicacy of texture, when highly magnified having the habit of a *Conferva*, and approaching nearly to *C. velutina*. Mr. B. adds, "its splendour is, doubtless, enhanced by the surrounding twilight gloom; but it is caused by rays of light concentrated by, and reflected from, the innumerable and inconceivably minute lenses of the leaf." It is denied that this light can be emitted either from the more obvious interspersed *Musci*, or reflected from the silicious particles of the gritstone. Were it not presumptuous to

(SHINING FEATHER-MOSS. *H. lucens.* Linn. Hedw. Huds. Lightf. Dicks. Sm. *Hookeria lucens.* E. Bot. Hook. Woods, wet ditches, moist banks, and among rocks. E.) P. April—June.

B. (1) *Branches irregular: leaves irregular: capsules upright.*

H. **STELLA'TUM.** Shoots upright: leaves egg-shaped, ending in long points, rather expanding, coloured.

Dicks. H. S.—*Dicks.* 1. 7—(*E. Bot.* 1302—*Musc. Brit.* xxvi. E.)—*Dill.* 39. 35—*Vaill.* 28. 10.

Shoots somewhat branched, rather tawny at the base, yellowish at the end. *Leaves* spear-awl-shaped, the ends standing out. *Fruit-stalks* few, lateral, nearly an inch long, almost upright, red. *Capsules* egg-shaped, but bulging on one side. *Lid* short, pointed, distinguishable at first sight from *H. cuspidatum*, by the leaves at the ends of the stems not being rolled in, but expanding. Dicks.

(Hooker discriminates var. *a. majus;* yellow brown, not rare in fruit: in marshes.

Var. *β. minus;* less upright, greener; with leaves more recurved: on walls and rocks. *H. squarrulosum.* E. Bot. 1709.

YELLOW STARRY FEATHER-MOSS. *H. stellatum.* Schreb. Hedw. Turn. Sm. Hook. *H. protensum.* Dill. Turfy bogs, marshes, stone walls, and rocks. March. E.)

H. **HALLERI.** Stem creeping, pinnate: the branches short, erect: all the leaves recurved, cordate, acuminate, obsoletely two-nerved at the base, subserrulate towards the apex: lid obtusely conical.

Grev. Scot. Crypt. 174.

Plant creeping closely on the rocks in diffused tufts, of a rich yellowish, or reddish brown colour. *Stems* two or three inches long, with erect branches. In general habit resembling the smaller varieties of the preceding species.

HALLERIAN FEATHER-MOSS. Rare. Discovered by Dr. Greville on Ben Lawers. Scot. Crypt. E.)

H. **SCIUROI'DES.** Shoot upright, somewhat branched, bent: leaves tiled, egg-spear-shaped, hair-pointed: capsules oblong, lid conical.

(*E. Bot.* 1903—*Musc. Brit.* xx. E.)—*Dill.* 41. 54—*Vaill.* 27. 12—*Kniph.* 6—*H. Ox.* xv. 5, *row the last,* 27.

Shoots two inches long, cylindrical. *Involucrum* rising half way up the fruit-stalk. Neck. *Stem* creeping, three or four inches long. *Shoots* from one to one and a half inch; seldom branched. *Leaves* closely tiled, egg-spear-shaped, pointed, ending in hairs. *Fruit-stalks* lateral, upright, half an inch high. *Involucrum* slender, scaly. *Capsules* cylindrical-egg-shaped. *Lid* conical, pointed. *Fringe* white. *Veil* yellow at the end. Weis. Creeping, interwoven, fixed to the bark of trees.

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venture a conjecture without having seen the identical specimens, we should be disposed to consider this questionable production might prove to be var. *Conferva gelatinosa,* or some analogous species. Consider also Note, vol. iv, p. 90. E.)

Branches numerous, upright, simple or divided, but generally bent like the tail of a squirrel. *Involucrum* at the base of the branches, slender, scales narrow, ending in short hairs. *Capsules* upright, dark brown when ripe. *Lid* very small. *Fruit-stalks* twisting when dry. Dill.

(SQUIRREL-TAIL FEATHER-MOSS. *H. sciuroides.* Linn. Dill. Huds. With. Relh. *Dicranum sciuroides.* Sw. Sm. *Leucodon sciuroides.* Schwaegr. Hook. *Pterogonium sciuroides.* Turn. E.) Trunks of old trees. Bungay. Mr. Stone. (New Forest, Hants. Mr. Lyell. In Scotland rare. Near Invermoriston; the most northern habitation known for this plant. Musc. Brit. E.) P. Feb.—April.

H. RUFES'CENS. Branches compressed: leaves hair-pointed, shining: capsules upright: lid conical. Dicks.

(*E. Bot.* 2296—*Musc. Brit.* xxv. E.)—*Dicks.* 8. 4.

But little branched; *branches* cylindrical but flatted, entirely covered with the tiled leaves, which are slender, straight, spear-shaped, ending in a hair, seldom a full green, but generally yellowish or reddish. *Capsules* nearly cylindrical, slender, upright. *Fringe* white. *Lid* crimson, conical, acute. Hal. Has been confounded with *H nitens*, but differs from that in having upright capsules, a very short involucrum, and few, but long branches. Dicks. Fasc. iii. p. 9.

(REDDISH SHINING FEATHER-MOSS. By error of the press *H. refuscens* of With. Ed. 3. 4 and 5. E.) Cryb y Ddeseil, though rarely with capsules. Mr. Griffith. (On wet rocks in the Highlands of Scotland. Mr. Dickson. Covering the perpendicular rocks by the falls of Moness, in fructification. Mr. W. Borrer. This very beautiful Moss, with stems four or five inches long, is not uncommon in Scotland. Musc. Brit. E.)

H. CRISP'UM. Shoots ascending: fruit-stalks lateral: capsules oblong: beak of the lid bent: leaves oblong, blunt, wrinkled, in two rows.

Dicks. H. S.—(*E. Bot.* 617. E.)—*Dill.* 36. 12—*Hall. Enum.* 3. 5, *at p.* 109, *Hist.* 46. 5, *at* iii. *p.* 56—*Happ.* ii. *Hypn.* 5—*H. Ox.* xv. 5, *row* 3. 10, *p.* 625.

The most elegant of the genus. Grows in dense broad strata. *Shoots* a span long, flat, a little raised. *Leafits* closely tiled alternate, in two rows, spear-shaped, blunt, shining, wrinkled. *Fruit-stalks* half an inch long, lateral. *Involucrum*, leaves paler. *Capsules* nearly upright, egg-shaped. *Lid* with a long beak. *Veil* long. Weis. From two to twelve inches long, crowded and lying one upon another, branches compressed, blunt, undivided, alternate or in pairs. *Leaves* crisped, transversely waved. The whole *plant* is pale green in winter, yellowish in summer. Dill.

(CRISPED FEATHER-MOSS. E.) On chalk hills near Gravesend, and on the banks of the Thames above the reach of the tide. On St. Vincent's Rocks, Bristol; and on the Welsh mountains. About Kirkby Lonsdale, Westmoreland. Sir J. E. Smith. On rocks in Garn gingle, three miles from Denbigh Mr. Griffith. (Stony banks in the vale of Dudcombe, Painswick; in fruit. Mr. O. Roberts. E.) P. March—April.*

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* (M. Parmentier has published some observations on this Moss, proposing it as a substitute for wool for stuffing mattresses and furniture. When beaten and properly prepared, it is said not to retain moisture, nor form into lumps. It is little liable to decay, and is

H. ME'DIUM. Shoots creeping: leaves broad, spear-shaped, pointed, tiled but open: capsules cylindrical, fringed.

(*E. Bot.* 1274—*Musc. Brit.* xxiv. E.)—*Dill.* 42. 65.

Crowded together. *Leaves* pressed to when dry. *Fruit-stalks* less than half an inch in length. Dill. (Of a very lurid colour. Musc. Brit. E.)

LONG-HEADED FEATHER-MOSS. Trunks of trees near the ground, and on stones. P. Jan.—Feb. E.)

H. PULCHEL'LUM. Shoots crowded, upright: branches somewhat fasciculated, strap-shaped: fruit-stalks long: capsules upright, somewhat oblique. Dicks. ii. 13.

Dicks. H. S. and Fasc. 5. 6—(*E. Bot.* 2006—*Musc. Brit.* xxv. E.)

Shoots short, crowded in close tufts. *Branches* nearly equal, expanding. *Leaves* near together, egg-spear-shaped, shining. *Involucrum* short. *Fruit-stalks* as long again as the shoot, rising from its base, upright. *Capsules* inversely egg-shaped. *Fringe* toothed. *Lid* pyramidal. *Veil* none on the specimens. Dicks. (A small species, rarely exceeding an inch in length. Musc. Brit. E.)

(FINE-TUFTED FEATHER-MOSS. E.) Shady woods, and among rocks in mountainous countries.

H. VITICULO'SUM. Shoots branched, prostrate: leaves oblong, acute, expanding: capsules oblong: lid conical.

Dicks. H. S.—*Dill.* 39. 43—(*E. Bot.* 265—*Musc. Brit.* xxii. E.)—*H. Ox.* xv. 5, *row* 1. 7—*Vaill.* 23. 1—*Pluk.* 47. 4.

Covering trunks of trees in large patches. *Stems* fibrous, creeping, very long, branched. *Branches* upright, when dry cylindrical, and twisted like a rope. *Leaflets* nearly triangular, the upper ones largest. *Fruit-stalks* about an inch high, rising from the bosom of the branches, out of small hairy scaly fences. *Capsules* small, shining. *Lid* very short, conical, pointed. *Mouth* appearing fringed when magnified, smooth to the naked eye. Weis. *Fruit-stalks* and *capsules* upright. Crisp when dry. *Leaves* triangular, keeled, pointed, but not hairy. Dill.

(CYLINDRICAL FEATHER-MOSS. *H. viticulosum.* Linn. Dill. Sm. *Neckera viticulosa.* Hedw. Turn. *Anomodon viticulosum.* Musc. Brit. Hook. E.) On trunks of trees, and sometimes on the ground. P. March—April.

B. (2) *Branches irregular: leaves irregular: capsules leaning.*

H. RUSCIFO'LIUM. Stem elongated, somewhat branched: leaves heart-shaped, concave, finely serrulated, diverging: lid convex, beaked.

Hedw. Stirp. iv. 4—*E. Bot.* 1275—*Musc. Brit.* xxvi. E.)—*Dill.* 38. 31.

Adhering to stones under water, in broad patches, one or two inches or more in length, according to the rapidity of the stream. *Branches* upright, cylindrical below, flat above. *Leaves* egg-spear-shaped, closely tiled, two-rowed, and less compacted upwards. *Fruit-stalks* on the stem

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reported to be free from the property of imbibing and communicating contagion, which animal substances possess. Some other Mosses may be found still better adapted to such purposes. E.)

between the shoots, and from the bosom of the leaves. *Capsules* short, thick, drooping. *Lid* beaked. *Mouth,* fringe long. Weis. *Leaves,* deep dull green. *Fruit-stalks* half an inch high. Dill. (The *stems* often exceed a span in length; and the *leaves,* in certain situations, attain a greater size than in any other species. Musc. Brit. E.)

(Long-beaked Water Feather-moss. E.) *H. riparioides.* Hedw. *H. rutabulum* δ. Huds. and With. Ed. ii. (Recent authorities have decided *H. prolixum,* Dicks. to be only an elongated var. of this species. E.)

(On woods and stones in pools and rivulets. E.) The shoots are often incrusted with calcareous earth, which in time accumulates thereon so as to form masses of twenty or thirty pounds weight. Weis. P. March—Sept.

H. LUTES'CENS. Shoots trailing: fruit-stalks lateral: leaves egg-spear-shaped, scored.

Dicks. H. S.—(*E. Bot.* 1301—*Musc. Brit.* xxv. E.)—*Hedw. Stirp.* IV. 16 —*Dill.* 42. 60.

Differs from *H. sericeum* in the *shoots* being longer, more slender, and limber; the *branches* more distant and less crooked, the *fruit-stalks* longer, the leaves and the involucrum longer; the capsules rather shorter, and bent; the lid also bending. *Fruit-stalks* from the shoot as well as from the branches. Dill. *Plant* of a pale yellow green.

(Yellowish Feather-moss. E.) *H. sericeum* γ. Huds. Ed. ii. 506. (Banks, and trunks of trees, not uncommon. E.) P. Jan.—April.

H. CASSU'BICUM. Leaves spear-shaped, scored, hair-pointed: capsules cylindrical, leaning. Dicks.

Vaill. 27. 1.

Nerves on the leaves more than three. *Capsules* never upright. Scop.

(Striated Feather-moss. E.) On trees, in moist shady places.

H. INTRICA'TUM. Shoots creeping: branches short: fruit-stalks lateral: capsules urn-shaped, beak bent: leaves spreading, spear-shaped, taper-pointed.

E. Bot. 202—*Vaill.* 28. 2.

Forms a close green mat on the decayed bark of trees in damp woods. *Shoots* several inches in length. *Branches* short, slender. *Veil* slender, cylindrical, whitish. E. Bot.

(Matted Feather-moss. E.) First found by Mr. Teesdale, and since by Sir J. E. Smith, in woods on the south east side of the river at Matlock.

H. UNDULA'TUM. Shoots branched: branches somewhat winged: leaves waved and folded: fruit-stalks lateral and axillary.

Dicks. H. S.—(*E. Bot.* 1181—*Musc. Brit.* xxiv. E.)—*Dill.* 36. 11—*H. Ox.* xv. 6. 33.

A span long, lying flat. *Leaflets* closely tiled, in a double or triple series. Weis. *Fruit-stalks* long, slender, reddish. *Veil* straw-coloured, with a brown spot at the end. *Capsules* oblong. *Lid* spit-pointed. *Mouth* fringed. *Involucrum,* leaves narrow, short, bent back. *Shoot* not always branched; its rib yellowish. *Leaves* tender, pellucid, smooth, shining, pale green, not changing colour when dry. *Involucrum* lateral, and in the angles of the branches, composed of short, narrow, reflexed scales. *Fruit-stalks* one and a half to two inches long. *Capsules* rust-coloured, crooked when ripe. *Lid* pointed. Dill.

(This fine species differs most strikingly from the rest of the genus by its peculiar habit, its white membranous and undulated leaves; and still more remarkably from all its British congeners by its furrowed capsules, giving it the same relation with the *Hypna* as *Mnium* bears to *Bryum*. Musc. Brit. E.)

(Waved Feather-moss. E.) Woods, shady places, and moist rocks. On the top of Snowdon. (In Bingley Woods, Yorkshire, where it may be frequently observed in fruit. Hailstone in Whitaker's Craven. E.)
P. March—April.

H. al'bicans. Shoot branched, ascending: fruit-stalks lateral: capsules oblong: lid conical, blunt: leaves oblong-spear-shaped, bristle-pointed.

Dicks. H. S.—*Hedw. Stirp.* iv. 5—(*E. Bot.* 1300.—*Musc. Brit.* xxv. E.)—*Vaill.* 26. 9—*Dill.* 42. 63.

Shoots about two inches long, scattered, almost upright, but little branched, yellowish green mixed with white. *Leaves* spear-shaped, bristly at the end, every where surrounding the stem. *Fruit-stalks* lateral, half an inch upright, red; but rarely found. *Capsules* small, oval, oblique, rather nodding; yellow red. *Lid* short. *Mouth* fringed. Dicks. Scarcely upright, not crowded together, a little branched, shoots slender, yellowish pale green. *Leaves* slender, pressed to, soft, shining. *Involucrum* hairy. Dill.

(Whitish Silky Feather-moss. E.) In loose sandy soil on heaths, and places thinly clothed with grass: but seldom with capsules. Dill. May.

H. stria'tum. Branches crooked: leaves egg-shaped, scored, acute, expanding in every direction: lid pointed.

Hedw. Stirp. iv. 13—(*E. Bot* 1648—*Musc. Brit.* xxvi. E.)—*Dill.* 38. 30—*Vaill.* 27. 1—*H. Ox.* xv. 6, *row* 3. 8, *p.* 625.

Slender, creeping, matted together, irregularly branched. *Leaves* small, triangular, pale green. *Fruit-stalks* half to three quarters of an inch in length. *Capsules* swollen, short, nodding. *Involucrum* slender, scales narrow, ending in hairs. Dill. (*Leaves* scored. *Fruit-stalks* often twisted, untwisting when moistened and turning the capsule from the right to the left.

(Scored-leaved Feather-moss. E.) *H. rutabulum* γ. Huds. and With. Ed. i. Woods and bushes, on the roots and trunks of trees. P. Jan.

H. tri'quetrum. Branches bowed back: leaves egg-shaped, spreading: fruit-stalks axillary.

(*E. Bot.* 1622—*Musc. Brit.* xxvi. E.)—*Dill.* 38. 28—*Vail.* 28. 9—*Buxb.* iv. 63. 1.

Branches unequal. *Leaves* triangular, pointed. Linn. Spreading to a foot in length, reddish, elastic, rising upwards. Often grows upright. *Branches* frequently bent to the ground, their extremities taking root. *Leaves* broad, triangular, not keeled, tender, pellucid, pale green, pointed. *Involucrum* rigid, oblong, composed of reflexed scales, sometimes two or three together. *Fruit-stalks* seldom more than an inch high. *Capsules* upright, thin; when ripe thicker, leaning, crooked. Dill.

(GREAT TRIANGULAR FEATHER-MOSS. E.) Woods about the roots of trees, and in dry barren pastures. P. Sept.—Jan.*

H. FLU'ITANS. Shoots branched: capsules oblong: lids conical: leaves egg-spear-shaped, distant, expanding.

(*E. Bot.* 1448—*Musc. Brit.* xxiv. E.)—*Dill.* 38. 33—*Vaill.* 33. 6.

Fruit-stalks fine red, in some plants very long, in others scarcely an inch long. *Capsules* red, hooked, very short, fringed at the mouth. Linn. Much branched, slender, a foot long or more, either upright or floating. *Leaves* narrow, alternate, those on the stem fewer and broader than those on the branches, soft, pellucid, yellow green. *Capsules* not hitherto found. Dill.

(FLOATING FEATHER-MOSS. E.) Stagnant waters. (Marshy places (sometimes in streams) rarely fructifying but in places that are only occasionally inundated. Musc. Brit. E.)

H. RUTAB'ULUM. Branches irregular, ascending: leaves tiled, egg-shaped, acute, sharp-pointed: lids conical.

Hedw. Stirp. iv. 12—(*Musc. Brit.* xxvi. E.)—*Buxb.* iv. 62. 2—*Fl. Dan.* 824. 2—*H. Ox.* xv. 6, *row* 5. 18—*Vaill.* 27. 8—*Dill.* 38. 29, *capsules the best, but the shoots, as Haller remarks, are too round*—*H. Ox.* v. 6. 35.

Leaves pellucid. *Mouth* fringed. Weis. *Leaves* triangular, green, shining when dry, not keeled. *Capsule* dark brown, shining. Dill.

(COMMON ROUGH-STALKED FEATHER-MOSS. E.) Grows much crowded, in patches, and full of fructifications. Woods and hedges, on the roots and trunks of trees and shrubs: on the ground in barren places. P. Sept.—Jan.

Var. 2. Upright, short. Leaves slender.

Marshy places. Dill. in R. Syn. p. 83. n. 18.

(The authors of Musc. Brit. include under this species both *H. crenulatum*. E. Bot. 1261; and *H. brevirostre*. E. Bot. 1647. (not of Ehrh.) E.)

C. (1) *Shoots winged with branches: capsules upright.*

H. SMITH'II. Leaves nearly circular, somewhat concave: capsules egg-cylindrical: veil hairy upwards. Dicks. ii. 10.

(*E. Bot.* 1326—*Musc. Brit.* xiv. E.)—*Dicks.* 5. 4.

Deep green. *Shoots* hard, woody, pointed: in the middle, or towards the end, bowed in. *Branches*, if pressed down, recovering their former direction, on the pressure being removed. *Wings* strap-shaped, bowed in and curled at the ends. *Leaves* tiled, open, pressed to at the base. *Involucrum* cylindrical, the leaves egg-spear-shaped, ending in hairs. *Fruit-stalks* numerous, solitary, very short. *Capsules* upright, egg-shaped, nearly cylindrical, reddish brown, shining. *Fringe* obscurely toothed. *Lid* roundish, with a beak a little oblique. *Veil* slanting. Dicks.

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* (Used to pack glass and earthenware: for which purpose several other of the larger species might answer equally well. E)

(Curling Feather-moss. *Pterogonium Smithii.* Sw. Sm. Musc. Brit. E.) Trunks of trees (at the half-way house, E.) near Barham Downs, Kent. Sir J. E. Smith. (Near Walthamstow. Mr. Dillwyn. Near Weymouth. Mr. Groult. E. Bot. Abundant in Devonshire. Musc. Brit. E.)

H. penna'tum. Leaves egg-spear-shaped, tiled, pointed, in two rows, compressed, waved: involucrum as long as the fruit-stalk.

Dicks. H. S.—*Hedw. Stirp.* iii. 20—(*E. Bot.* 1443—*Musc. Brit.* xxii. E.)—*Dicks. Fasc.* i. 8.

Differs from *H. complanatum* in the leaves being transversely waved, and the fruit-stalk not being longer than the involucrum; and from *Fontinalis pennata* in the capsule standing out of the involucrum. Dicks.

(Small Quilled Feather-moss. E.) *Neckera pumila.* Hedw. Sm. Hook. Musc. Brit. E.) *H. pumilum,* and *H. Dicksoni,* of Gmel. Trunks of trees in woods between Troutbeck and Ambleside, Westmoreland. Sir J. E. Smith. (Colbourn Grove, adjoining the Frith wood, near Painswick, Gloucestershire: in fruit in May. Mr. Oade Roberts. Very abundant in the New Forest, Hants: at Inverary and Cliesh, plentiful, but generally rare in Scotland. Musc. Brit. E.)

H. ni'tens. Branches very short: leaves spear-awl-shaped, shining.

(*Fl. Dan.* 1123. 2—*E. Bot.* 1646—*Musc. Brit.* xxv. E.)—*Dill.* 39. 37.

Shoots upright, one to three inches high. *Branches* lateral. *Leaves* closely set. *Fruit-stalks* terminal and axilary. *Capsules* egg-shaped, leaning when ripe. *Lid* short, conical, pointed. *Mouth* entire. Web. *Leaves* very narrow, almost hair-like. *Involucrum* very long. Dill. *Fruit-stalk* near two inches long; capsule rather crooked, which gives it the appearance of leaning.

(Shining Hair-like Feather-moss. E.) Turf bogs, Scotland. Dicks. ii. 12. (Pentland Hills. Mr. Maughan. Near Acle, Norfolk. Mr. Turner. E.)

H. plumo'sum. Shoots creeping: branches crowded: leaves tiled, awl-shaped.

Dicks. H. S.—*Hedw. Stirp.* iv. 15—(*E. Bot.* 2071—*Musc. Brit.* xxv. E.)—*Dill.* 35. 16.

Shoots about a span long, brownish, with dark rust-coloured wool underneath, by which it adheres closely. *Branches* from each side of the shoot, generally undivided, clothed with very slender soft and shining leaves. *Involucrum* hairy. Dill.

(Plumose Feather-moss. *H. alpinum.* E. Bot. 1496, according to Musc. Brit. E.) *H. sericeum β.* Huds. 506. Trunks and roots of trees: (moist banks and walls. E.) Jan.—Feb.

C. (2) *Shoots winged with branches: capsules leaning.*

H. prolif'erum. Shoots proliferous: nearly flat, not shining: fruit-stalks several together: involucrum bristly.

Curt.—(*E. Bot.* 1494—*Musc. Brit.* xxv. E.)—*Dill.* 35. 14—*Vaill.* 25. 1—*H. Ox.* xv. 5, *row* 3. 20—*Tourn.* 326. c.—*Ger.* 1372. 7—*Ger. Em.* 1561. 7—*Park.* 1360. 3—*J. B.* iii. 765. 1.

Its structure is very singular; one large *compound shoot* proceeding from the middle or disk of another, and this repeated several times in the same plant. Linn. A span long or more, doubly winged. *Fruit-stalks* an inch long (or more) from the middle of the shoot, and from the rib of the branches one to three (four or five) in a place. *Involucrum* large, conical, hairy. *Lid* conical, pointed. *Veil* oblique. Weis. *Capsules* leaning, reddish, thick. *Mouth*, fringe in a double row. *Leaves* so minute as hardly to be well distinguished by the naked eye. *Capsules* reddish, at first straight, then crooked. The leaves smaller, not shining, the shoots more serpentine, and the bristly involucrum distinguish this from *H. parietinum*. Dill. *H. parietinum*, and *H. proliferum* of Gmel. are both the same plant.

(PROLIFEROUS FEATHER-MOSS. *H. parietinum.* Willd. E.) Heaths and thick shady woods. P. Dec.—Feb.

This singularly elegant Moss covers the surface of the earth in the thickest woods, through which the sun never penetrates, and where no other plant can subsist. Linnæus.

(Here might be introduced that very bone of contention, *H. recognitum*, (E. Bot. 1495), which, unimportant as so minute a production may appear to ordinary perceptions, has actually occasioned a war (bellum *civile*), of the Giants; but not presuming to rank with the "Maximi," even "in minimis," and, availing ourselves of the privilege of the "statura brevi," we beg to refer the inquisitive student to the arena itself. Vid. Linn. Tr. vol. xiii. p. 461. Musc. Brit. 171. E.)

H. PARIETI′NUM. Shoots proliferous, nearly flat, shining: fruit-stalks several together: involucrum scaly.

(*E. Bot.* 1421—*Musc. Brit.* xxv. E.)—*Vaill.* 29. 1—*Dill.* 35. 13—*Buxb.* ii. 1. 2, *and* ii. 2. 1—*Happ.* 1, *Hypn.* 3—*Vaill.* 29. 1—*Schmid.* 58. 3.

Fruit-stalks four, five, or more together, at the base of the branches; about fifteen lines long. *Shoot* bent at the places where the branches issue out, so as to be zigzag. Very like *H. proliferum* in its mode of growth, and the proliferous shoots sending out other similar shoots, but the leafits are more distinct, less compacted together, of a pale green with a silky gloss. Weis. *Shoots* lying on the ground, from a span to a foot long, consisting of three or four parts, shewing the annual increase; and as it grows in length at one end, the other end is converted into roots. *Branches* winged. The new shoot puts forth in the spring not from the end of the old one, but near to its end; it is very densely clothed with leaves, and after a time sends out branches. *Fence scales* reflexed. Dill. Both in this and in *H. proliferum*, the shoots resemble the winged leaves of Ferns.

(SHINING TAMARISK FEATHER-MOSS. *H. parietinum.* Huds. Lightf. With. Relh. Ab. Sw. Roth. Hoffm. Neck. Weis. *H. splendens.* Hedw. Sibth. Turn. Sm. Hook. E.) Woods, heaths, and shady places. B. Feb.—March.*

H. FILI′CINUM. Shoots simply winged: leaves oblong, taper-pointed, reflexed, pointing one way: capsules nearly cylindrical: lid convex.

(*Fl. Dan.* 1123. 1—*E. Bot.* 1570—*Musc. Brit.* xxvi. E.)—*Vaill.* 29. 9—*Dill.* 36. 19.

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* Used in Sweden to fill up the chinks in the walls of timber houses.

Fertile shoots trailing, the barren ones upright. *Fruit-stalks* one or two inches long; from the bosom of the branches. Neck. *Shoots* from three to six inches, undivided, winged. *Wings* leafy. *Fruit-stalks* from the middle of the shoots, one or more in a place. *Fence* hairy. *Capsules* reclining. *Lid* conical, short, blunt. Weis. Sometimes branched, always sending out numerous lateral shoots, which are shorter as they grow nearer to the end of the stem. *Leaves* very numerous, pleasant green, narrow, bent back. Dill.

(FERN FEATHER-MOSS. Under the present species Messrs. Hooker and Taylor include *H. dubium;* also *H. fallax,* E. Bot. 2127. E.) Marshy places, and near springs. P. March—Summer.

H. CRISTA-CASTREN'SIS. (Stems closely pectinated: leaves falcato-secund, ovato-lanceolate, acuminated, serrulate, striated, faintly two-nerved at the base: capsule oblongo-ovate, curved, cernuous: lid conical.

(*E. Bot.* 2108—*Musc. Brit.* xxvii. E.)

It very much resembles an ostrich feather from its shining parallel rays, by which, and by its silky hue, it is readily distinguishable. *Fructifications* seldom to be met with. Linn.

(PLUMY-CRESTED FEATHER-MOSS. *H. crista-castrensis.* Linn. Hedw. E. Bot. Hook. Rocks, about the roots of trees in dry woods and on the ground in stony soils, rare. Near Hawe Water, Rev. James Dalton. Clova mountains, Scotland. Mr. Drummond. Musc. Brit. E.) P. March - June.

C. (3) *Shoots winged with branches: capsules drooping.*

H. DU'BIUM. Shoots taper-pointed: leaves upright but expanding: capsules oblong, crooked. Dicks.

(*E. Bot.* 2126. E.)—*Dill.* 36. 21.

Leaves yellow green, smooth, narrow, spit-pointed, upright on the upper, reflected on the lower shoots. *Fruit-stalks* often bent and twisted in a young state; afterwards becoming straight. *Capsule* oblong, crooked when old. *Lid* short. *Involucrum* pyramidal, its scales hair-pointed. Dill.

(FINE CURVED-LEAVED FEATHER-MOSS. E.) Wet heaths and marshy places. Feb.

H. ABIE'TINUM. Branches somewhat cylindrical, distant, unequal: leaves egg-spear-shaped, closely tiled.

(*E. Bot.* 2037—*Musc. Brit* xxv. E.)—*Dill.* 35. 17—*Vaill.* 29. 12—*H. Ox.* xv. *row* 4. 22, *p.* 626.

Fruit-stalks from the middle of the rib of the shoot, single, purple, straight, as long as the shoot. *Veil* upright, awl-shaped, pale. *Capsule* yellowish red, more bowed back than in any of the rest; edge of the mouth entire, with a short open fringe within. Linn. *Shoots* two to four inches long, elastic when fresh, brittle when dry. *Wings* limber, alternate below, opposite and shorter above. *Leaflets* egg-spear-shaped, scored, ending in hairs, closely tiled. Weis. *Branches* straight. *Leaves* straight, which distinguishes it from *H. Filicinum.* Scop. Grows matted together, half upright, sometimes branched, three to five inches long. *Side shoots* awl-shaped, numerous, opposite, surrounded on every side by small dull yellow green leaves. Dill. No fructification yet found in this country.

(FIR-BRANCHED FEATHER-MOSS. E.) Mountainous places. On hills near Hinksey, Oxfordshire. Dillenius. In shady places, and on chalk hills about Northfleet. P. March.

H. PRÆLON'GUM. Shoots somewhat winged, trailing, fibrous: branches remote: leaves egg-shaped.

Hedw. Stirp. iv. 29—(*E. Bot.* 2035—*Musc. Brit.* xxv. E.)—*Dill.* 35. 15—*Vaill.* 23. 9—*Buxb.* iv. 63. 3.

Leafits serrated. At first sight distinguishable from all other *Hypna* by its shoots being very long, very closely crowded together, covering the trunks of trees, in broad patches and hanging down. *Shoots* trailing, very tender, brittle when dry, a span long, or more, clinging to the trees by means of numerous brown, woolly fibres. *Leafits* small, triangular, ending in a hooked hair, alternate, in a double row. Weis. From a span to a foot in length, doubly winged. *Leaves* very small, triangular. *Fruit-stalks* an inch long, purple. *Capsules* dull green, brown when ripe, short, nodding. *Veil* pale green, straight. Dill.

(A very variable species, under which Hooker and Taylor comprehend *H. Stokesii*, E. Bot. 2036; and *H. Swartzii*. E. Bot. 2034. E.)

(LONG TRAILING FEATHER-MOSS. E.) Trunks of trees, decayed wood, and in wet ground. P. Oct.—Feb.

D. (1) *Leaves bent back: capsules upright.*

H. RUGO'SUM. Shoots scattered, rather upright: leaves pointing one way, wrinkled at the base: fruit-stalks axillary.

Dicks. H. S.—(*E. Bot.* 2250. E.)—*Dill.* 37. 24.

Leaves spear-shaped, narrow, sharply pointed, closely tiled. Pol. *Shoots* seldom more than three inches long, thick, lying on the ground, crowded together, irregularly branched. *Leaves* exceedingly crowded, dry, crisp, their points in one direction, yellow green, when old or dry quite yellow. The fruit-bearing plants grow a little distant from the others, and have a different appearance. They are thinner, more pointed, the leaves more uniform, and less yellow. *Involucrum* open, scaly, at the origin of the branches. *Fruit-stalks* three quarters of an inch high. *Capsules* cylindrical, straight, slender, red when ripe. Dill.

(YELLOW WOLF'S-CLAW FEATHER-MOSS. (*H. rugosum.* Linn. Dicks. Sw. Sm. *H rugosum.* Hedw. is quite a different plant, represented as *H. rugulosum* in Musc. Brit. xxvi. E.) In bogs in Scotland. Near Loch Rannoch. Dickson. (On Prestwick Carr, Northumberland. Mr. Winch. E.)

H. FLAGELLA'RE. Shoots creeping: branches upright, rarely divided: leaves spear-shaped, taper-pointed, the ends reflexed.

Dill. 39. 42—(*Musc. Brit.* xxv. E.)

Leaves small, smooth, not very pellucid; produces its capsules in Sept. Dill.

(MANY-BRANCHED WATER FEATHER-MOSS. *H. umbratum.* E. Bot. 2565? E.) On stones near rivulets in the Highlands of Scotland. (On dripping rocks in the upper part of Westcrowe Dene, west of Wolsingham, Durham. Mr. Winch. E.)

D. (2) *Leaves bent back: capsules leaning.*

H. SCORPIOI'DES. Branches waved, trailing, hooked: leaves pointing one way, tapering to a point.

Dicks. H. S.—(*E Bot.* 1039—*Musc. Brit.* xxvii. E.)—*Dill.* 37. 25.

Branches brown, hooked, and yellow at the ends Linn. *Shoots* trailing, cylindrical, one to three inches long. *Branches* rising upwards, thick, bent and thicker at the ends, about one inch long. *Leaves* spear-shaped, often ending in hairs, wrinkled at the base. *Fruit-stalks* half an inch to one inch high. *Capsules* cylindrical, slender, leaning. *Lid* pointed. *Mouth* with a white fringe. Web. *Barren* plants longer and thicker than the fertile ones, colour dark red, the ends purple and green. *Fertile* plants entirely green, except here and there a little purple. Dill. (One of the largest of British Mosses; with leaves generally nerveless; but, according to Schwaegrichen and Mr Tozer in Musc. Brit., occasionally two nerved; which shows how liable this, like most aquatic plants, is to vary. E)

(SCORPION FEATHER-MOSS. E.) Turfy bogs and marshes. Near Bishop's Castle, Shropshire, and about Penter, near Bangor. Near Norwich, and in the north of England; and at Corriattachan in Strath Swandie in the Isle of Sky. Turf pits on Ellingham and Geldestone fens. Mr. Stone. On Snowdon and Cader Idris. Mr. Griffith. P. Nov.—April.

H. SQUARRO'SUM. Branches straggling: leaves spear shaped, acute, bent back in five different directions.

(*E. Bot.* 1593—*Musc. Brit.* xxvi. E.)—*Fl. Dan.* 535. 1—*Dill.* 39. 38—*H. Ox.* xv. 5, *row* 2. 2—*Fl. Dan.* 648. 3.

Often six inches long, creeping, rib a beautiful purple, shining through the interstices of the leaves. *Leaves* ending in a sharp point, as fine as a hair. *Fruit-stalks* one inch to one inch and a half high, straight, springing from a cylindrical, scaly and hairy fence. *Capsules* egg-shaped, leaning. *Lid* blunt. *Mouth* wide open, fringe yellow. I have found capsules in July. Weis. Dill. *Capsules* rarely met with. Ray. *Fruit-stalks* solitary or in pairs. *Lid* not large enough to cover the mouth of the capsule, but joined to it by a kind of groove. Stackh.

(DROOPING-LEAVED FEATHER-MOSS. E.) Moist meadows, pastures and woods. P. Feb.—May.

Var. 2. Smaller. Leaves triangular, open, reflexed. Dill.

Vaill. 27. 5—*Dill.* 39. 39.

Not much different from var. 1, except in the leaves being smaller, paler, closer set, and more bent back. Weis. The capsules too are smaller, and the lid sharper. Dill.

Wet places.

H. PALUS'TRE. Shoots creeping: branches crowded, upright, on one side the shoot: leaves egg-shaped, pointing one way: capsules nearly upright.

(*E. Bot.* 1655—*Musc. Brit.* xxvi. E.)—*Dill.* 37. 27.

Branches upright, compressed, from half an inch to one inch high, numerous. *Leaves* in a double or triple series, sharp, hooked. Web. *Shoots* slender, creeping, with few leaves, and those shrivelled. *Branches* generally simple, short. *Leaves* dull green, hooked at the end. *Fruit-stalks* from the base of the branches, red, longer than the branches. *Capsules* oblong, a little inclining, brown when ripe. *Lid* larger in diameter than the capsule. *Veil* straight, pale. Dill.

(CREEPING MARSH FEATHER-MOSS. *H. luridum*. Hedw. Crypt. 38, and with this variable species Messrs. Hooker and Taylor also include *H. fluviatile*, E. Bot. 1303, (not Hedw.) and *H. adnatum*, E Bot. 2406, (not Hedw.) neither of which are properly British, according to the above authorities. E.) In wet places, and banks of rivers, not uncommon. P. Jan.—April.

H. LO'REUM. Shoots creeping: branches waved, upright: leaves pointing one way: capsules roundish, egg-shaped.

Dicks. H. S.—(*E. Bot.* 2072—*Musc. Brit.* xxvi. E.)—*Dill.* 39. 10—*Vaill.* 25. 2—*H. Ox.* xv. 5, *rou the last*, 24, *p.* 626—*Buxb.* iv. 64. 1—*Ger.* 1370. 1.

Fruit-stalks from the base of the branches. Neck. *Fruit-stalks* more than an inch high, from the stem between the branches upright. *Capsules* egg-shaped, leaning *Shoots* near a foot long or more, the rib rigid, brittle, surrounded by pale green leaves, those towards the end bent back. Dill.

(RAMBLING MOUNTAIN FEATHER-MOSS. E.) On mountains, in woods and heaths, in various parts of Britain. P. April.

H. ADUN'CUM. Shoots nearly upright, somewhat branched: leaves pointing one way, spear-awl-shaped, curled: branches hooked.

(*E. Bot.* E.)—*Hedw.* iv. 21—*Dill.* 37. 26.

Resembles the *H. cupressiforme*, but the shoots are more straight, less branched; leaves longer, hooked, their ends pointing one way; fruit-stalks twice as long, rising as well from the middle of the shoot as from the bosom of the branches. The shoots are remarkably rigid. *Fruit-stalks* two inches long, rising out of a slender, short, scaly involucrum. *Capsules* egg-shaped, distended, leaning. *Lid* conical, short, blunt. Weis. *Plant* yellowish or tawny when growing out of the water. Ray. *Involucrum* oblong, slender, scaly. *Veil* straight. Lower leaves less hooked than the upper ones. Dill

(UPRIGHT HOOKED FEATHER-MOSS. E.) Marshy and watery places, bogs, and wet pastures. Turf pits on Ellingham and Geldestone fens. Mr. Stone. P. April—Aug.

H. CUPRESSIFOR'ME. (Leaves closely imbricated, more or less falcato-secund, lanceolate, acuminated, entire except at the points, which are usually serrated, very faintly two-nerved at the base: capsule cylindrical, erecto-cernuous: lid conical, with a point.

Hedw. Stirp. iv. 23—*E. Bot.* 1860—*Musc. Brit.* xxvii.—*Fl. Dan.* 535—*Dill.* 37. 23 *and* 41. 53.

So sportive is this plant that it is scarcely possible to define in a few words the marks belonging to any of the varieties. γ at first sight is totally unlike the more usual state of *H. cupressiforme*; but we have seen the one run completely into the other. β is now universally acknowledged to belong to our plant; and we are equally satisfied of Dickson's *nigroviride* being no other.

α. vulgare. Stems broad, semi-cylindrical; leaves falcato-secund.

H. cupressiforme. Linn. (With. E.), Hedw. Turn. Sm. Hook. *H. nigro-viride*, Dicks. Turn.

β. compressum. Stems slender, compressed; leaves falcato-secund.

H. compressum. Linn. (With. to Ed. vii. E.)

γ. tenue. Stems very slender; leaves very slightly curved, narrow, lanceolate, quite entire.

H. polyanthos. E. Bot. 1664. (not *Leskea polyanthos.* Hedw.) Turn.

(CYPRESS-BRANCHED FEATHER-MOSS. E.) On banks and trunks of trees, common. Musc. Brit. E.)*

H. MOLLUS'CUM. (Stems pectinated: leaves falcato-secund, cordate, much accuminated, serrated not striated, faintly two-nerved at the base: capsules oblongo-ovate, curved, cernuous: lid conical.

Hedw. Stirp. iv. 22—(*E. Bot.* 1327—*Musc. Brit.* xxvii. E.)—*Dill.* 36. 210.

(COMPRESSED FEATHER-MOSS. *H. molluscum.* Hedw. Turn. Sm. Hook. *H. compressum.* With. to Ed. vii. *H. crista-castrensis.* Dicks. On the ground, common. March—April.

E. *Plant shrub-like; branches fasciculated.*

H. DENDROI'DES. Shoot upright, naked below, above with bundles of leafy branches: leaves strap-spear-shaped, tiled: capsules nearly cylindrical, upright: beak bent.

Dill. 40. 48—(*E. Bot.* 1565—*Musc. Brit.* xxv. E.)—*Fl. Dan.* 823. 2—*H. Ox.* xv. 5, *row* 5. 31—*Tourn.* 326—*Vaill.* 26. 6—*Happ.* 1. *Hypn.* 1.

Readily distinguished by its *stems* closely compacted together, its shrub-like appearance, from two to four inches high, terminated by a bush of branches. *Branches* upright, cylindrical, smooth, pointed at the end. *Leaves* egg-spear-shaped, pointed, flat, closely tiled. Weis. *Fruit-stalks* more than an inch long, from the base of the branches; upright. *Capsules* slender, upright. *Lid* conical, short. *Veil* slender. Dill. *Fruit-stalks* longer than the shoots. *Veil* covering the whole capsule. *Leaves* a little serrated. Leers. (The *columella* in dry weather raises the lid spirally, and allows the escape of the seeds; moisture contracts the columella in the same spiral manner, and again closes the capsule. Gray. E.)

(TREE-SHAPED FEATHER-MOSS. E.) Moist woods and shady places, about the roots of trees, and in moist pastures. P. Feb.—March.

H. ALOPECU'RUM. Shoot upright: branches fasciculated, terminal, subdivided: capsules rather drooping.

(*E. Bot.* 1182—*Musc. Brit.* xxv. E.)—*Dill.* 41. 49—*Vaill.* 23. 2 *and* 5—*H. Ox.* xv. 5, *row the last.*

In its tree-like mode of growth it resembles *H. dendroides,* but the shoots are longer, the trunk is taller, the branches expand more, and are more frequently branched again; the extremities are not straight, but hanging down, and the leaves expanding. When dry the leaves bent back at the points, but in *H. dendroides* they lie closely adpressed. Weis. *Stem* four or five inches high, covered with whitish pointed scales. *Leaves* serrated. *Fruit-stalks* shorter than the branches, bent. *Capsules* egg-shaped. *Lid* beak bent. Leers. *Stems* light red, rising from a trailing root. *Leaves* broad at the base, tapering to a point, alternate. *Involucrum* scales ending in hairs, compact. Dill.

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* (Well adapted for packing whatever requires a soft elastic covering. E.)

(Fox-tail Feather-moss. E.) Moist woods and shady places at the roots of trees, and by the sides of rivers. A. March—April.

F. (1) *Shoots nearly cylindrical: capsules upright.*

H. gra'cile. Shoots creeping: branches cylindrical, nearly upright: capsules egg-shaped.

Hedw. Stirp. iv. 6—(*E. Bot.* 1085—*Musc. Brit.* xiv. E.)—*Dill.* 41. 55—*Fl. Dan.* 649. 2.

Hangs suspended from the bark of trees in numerous cylindrical-pointed branches bending upwards, and somewhat resembling the claw of a bird. *Fruit-stalks* from the base of the branches, half an inch high. *Capsules* upright, pointed, ochrey colour when ripe. Dill.

(Slender Feather-moss. *H. gracile.* Linn. *H. ornithopoides.* Huds. *Pterogonium gracile.* Sw. Sm. Hook. *Pterigynandrum gracile.* Hedw. Trunks of trees and rocks. On beech trees in Enfield Chase. On the masses of stone called Grey Wethers, in Wiltshire. Forms great patches on rocks or trees, in subalpine countries frequent, but the fructification has rarely been observed in Britain, though common in France and Italy. P. Feb.—April.

H. attenua'tum. Shoots branched: branches bowed in, sometimes tapering, sometimes thickening: leaves egg-shaped, pointing one way: capsules upright, tooth fringed. Dicks. ii. 13.

Hedw. Stirp. i. 12—(*E. Bot.* 2420. E.)—*Dill.* 42. 66.

Fruit-stalks upright, lateral. *Veil* slender, twisting. *Capsules* cylindrical. *Beak* blunt. *Fringe* double, outer row of teeth sixteen. Hedw. Rather thick, much branched, yellow green, tawny when dry. In large patches on the trunks of beeches, particularly on the northern side. Dill.

(Attenuated Feather-moss. With this species Hooker and Taylor assimilate *H. atro-virens.* Dicks. Sm. and *H. filamentosum,* of the same authors. E.) Woods, on trunks of trees, Scotland.

H. stramin'eum. Shoots upright, thread-shaped, somewhat branched: leaves egg-spear-shaped, without a mid-rib, tiled. Dicks. 6.

Dicks. H. S. and Fasc. i. 9—(*E. Bot.* 2405—*Musc. Brit.* xxiv. E.)

Shoots nearly upright, strap-shaped, slender, when dry very brittle, two inches and more in length, straw-coloured, sometimes simple, or with one or two branches. *Leaves* convex and concave, glittering, pressed to. *Fruit-stalks* lateral, upright, red, one and sometimes two inches long, solitary or two together. *Capsules* egg-shaped, upright, bulging on one side. *Lid* short, somewhat pointed. Dicks.

(Straw-like Feather-moss. E.) In a marshy place on the west side of Hampstead Heath, near London. (Near Yarmouth. Mr. Turner. Abundant on Breadalbane mountains. Mr. Drummond. Musc. Brit. E.)

(Nearly allied to the preceding, and by some Botanists considered a variety of that species, is *H. trifarium.* Grev. Scot. Crypt. 279, therein characterized, "Stems nearly simple, elongated; leaves ovate, obtuse, entire, trifariously imbricated, suberect, tumid and concave, with a nerve disappearing towards the extremity." Stems slender, three inches to a foot or more in length, varying in colour from a rich brownish-purple to green. (Vid. also Musc. Brit. iv. 'Found by Dr. Greville on Ben Hallum and Ben Lawers.' E.)

H. cylin'dricum. Shoots creeping: branches and capsules cylindrical: leaves closely tiled, egg-shaped, pointed. Dicks. ii. 12.

(*E. Bot.* 2297—*Musc. Brit.* xiv. E.)—*Dill.* 41. 57.

Shoots (on the ground) sometimes branched, soft, shining, pale green or yellowish. *Leaves* narrow, not hairy, pressed to. *Fruit-stalks* reddish, one third of an inch long. *Capsules* upright, slender, cylindrical. *Lids* pointed. Dill.

(Cylindrical Feather-moss. *Pterogonium filiforme.* Hedw. Sm. Hook. Also, according to Musc. Brit. *Pterogonium cæspitosum.* E. Bot. 2526. E.) Woods, on the trunks of trees, Scotland. (On Ben Lawers, common. In Ireland. Arnott and Greville. E.)

F. (2) *Shoots nearly cylindrical: capsules leaning.*

H. ripa'rium. Shoots branched: leaves pointed, open, distant.

(*E. Bot.* 2060—*Musc. Brit.* xxiv. E.)—*Dill.* 40. 44—*Hedw. Stirp.* iv. 3—*Fl. Dan.* 649. 1—*Schmid.* 57. 3—*Buxb.* ii. 3. 3.

Stem four to six inches long. *Shoots* few and irregular, cylindrical if above, winged if below the surface of the water. *Leaves* egg-shaped, closely tiled on the young cylindrical shoots, more distant and spear-shaped on the principal stem, and hairy at the end. *Fruit-stalks* an inch long, upright, lateral. *Capsules* egg-shaped. *Lid* conical, beak short. *Mouth* fringed. *Veil* upright, covering the young capsule. *Involucrum* very short. Weis. When growing out of the water, or where it is often exposed to the air, the leaves are shorter and blunter, surrounding the stem, but when always immersed in water they are longer, more pointed, and wing the stems. Dill.

(Short-beaked Water Feather-moss. E.) On walls, and moist stony places on the banks of rivers, on planks and stones about water mills, and in rivers. Bungay. Mr. Stone. (Garden wall at Tocknels, near Painswick. Mr. Oade Roberts. E.) P. Sept.—April.

H. mura'le. Shoots creeping: branches mostly upright, in one direction: leaves egg-shaped, concave. Dicks.

Hedw. Stirp. iv. 30—(*Musc. Brit.* xxiv. E.)—*Dill.* 41. 52.

About an inch long, branches very short, mostly upright. *Leaves* numerous, dark green, not shining. Dill. *Fruit-stalks* from the base of the branches. *Leaves* ribless. (The authors of Musc. Brit. observe: the rostrate *lid,* and concave shortly-pointed *leaves* well distinguish this species from its affinities. E.)

(Wall Feather-moss. E.) *H. myosuroides* γ. Huds. and With. Ed. ii, (also *H. confertum.* E. Bot. 1038, according to Musc. Brit. E.) On walls. Dec.—Jan.

H. mol'le. Shoots pendent, slender, very much branched: leaves tiled, egg-shaped, acute: capsules roundish. Dicks. ii. 11.

(*Grev. Scot. Crypt.* 283—*E. Bot.* 1992—*Musc. Brit.* xxiv. E.)—*Dicks.* 5. 8.

Whole *plant* soft, flaccid, and flexile. *Shoots* bundled, floating, roundish, somewhat zigzag. *Branches* of very unequal lengths, the ends mostly blunted. *Leaves* upright, concave at the base, open at the end, broad-egg-shaped. *Scaly bulb*, leaves spear-shaped, taper-pointed. *Fruit-stalks* few, short, bowed in. *Fringe* with a ring, with many teeth. *Lid* and *veil* not found. Dicks. (Usually two or three inches in length. E.)

(Soft Feather-moss. E.) Banks of rivulets in the Highlands of Scotland.

H. cuspida'tum. Shoots spreading, winged with branches, ending in a long point: leaves oblong, taper-pointed: capsules cylindrical: lid conical.

Dicks. II. S.—(*E. Bot.* 2107—*Musc. Brit.* xxvi. E.)—*Dill.* 36. 31—*Buxb.* ii. 3. 1 *and* 2.

The sharp rigid points at the ends of the middle and terminal shoots afford a ready mark of distinction. From one to four inches high. *Fruit-stalks* two or three inches long, upright, lateral. *Involucrum* scaly, long. *Capsules* egg-shaped, thick, a little bent, leaning. *Lid* blunt, short, scarlet. *Mouth* fringed. Weis. Pale green, yellowish or reddish when in fruit. *Leaves* alternate, thin, pellucid, shining. Dill.

(Pointed Bog Feather-moss. E.) Bogs, marshes, wet pastures and moist woods. P. March—May.

H. filifo'lium. Shoots spreading: branches numerous very short: leaves awl-shaped, acute: capsules oblong: lid conical, blunt.

Dill. 42. 62.

Forming a compact interwoven tuft. Much branched; branches slender. *Leaves* very narrow, smooth, resplendent green, when dry pressed to, standing out when fresh. *Fruit-stalks* half an inch high, very slender, reddish. *Capsules* slender, at first upright, afterwards leaning a little, and again upright when ripe. *Involucrum* slender, hairy. Dill.

(Thread-leaved Feather-moss. E.) *H. filiforme.* Huds. and With. Ed. ii. Trunks of trees. P. Feb.

H. filamento'sum. Shoots crowded, thread-shaped, branched: capsules egg-shaped, fringed: involucrum buld-like. Dicks. ii. 11.

Dill. 36. 18.

Crowded, compressed, closely interwoven, so that it is hardly possible to extricate a single plant. *Shoots* and *branches* cylindrical, not thicker than a strong sewing thread. *Fruit-stalks* purple, an inch long. *Capsules* slender, straight, reddish and bent when ripe. *Involucrum* oblong, large, composed of unequal scales. Dill.

(Thread-branched Yellow Feather-moss. The same as *H. atro-virens*, according to Musc. Brit. Woods; trees and rocks among mountains.

F. (3) *Shoots nearly cylindrical: capsules drooping.*

H. pu'rum. Shoots winged, spreading, awl-shaped: leaves egg-shaped, blunt, approaching.

Curt. 207—(*E. Bot.* 1599—*Musc. Brit.* xxiv. E.)—*Fl. Dan.* 706. 2—*Dill.* 40. 45—*Vaill.* 28. 3.

Branches bowed. *Leaves* ending in a spit-point. Neck. Readily known by its peculiar sleek habit, by its freedom from dirt, and its long, cylindrical winged scaly shoots. A span long in wet, but shorter in dryer places. *Fruit-stalks* one to two inches high, from the mid-rib of the shoots and branches; upright shining. *Involucrum* oblong, scaly. *Capsules* cylindrical, leaning. *Lid* beaked. *Mouth* fringed. Weis. *Stems* nearly cydrical, upright or reclining; often branched. *Branches* winged. *Leaves* blunt, thin, soft, smooth, rather shining, when dry crumpled. Dill.

(SPOTLESS SILKY FEATHER-MOSS. E.) Pastures, meadows, banks, and woods. P. Nov.*

(Var. Shorter; less regularly pinnate. E. Bot. 2189. *H. illecebrum.* With. Ed. 7. Sm.; but not of Hedwig, his species (having leaves with more acuminated and serrated points, and with a longer and more decided nerve), being American, and not British, unless recently discovered in Scotland, as reported by Mr. Arnott. Hook. E.)

(**H. SCHRE'BERI.** Leaves closely imbricated, nearly erect, elliptical, apiculate, concave, entire, faintly two-nerved at the base: capsule ovate, cernuous: lid conical. E.)

(*E. Bot.* 1621—*Musc. Brit.* xxiv. E.)—*Dill.* 40. 47—*Vaill.* 29. 10—*Neck. Meth.* 1. 10—*Buxb.* iv. 64. 1, *the right hand of the upper figures; and* 3.

Longer and more slender than the preceding, branches and leaves more pointed, more shining when dry, more thinly set, and exposing more distinctly the red mid-rib. Dill.

(SCHREBERIAN FEATHER-MOSS. *H. purum.* Ehrh. Var. 2. With. to Ed. 7. *H. Schreberi.* Dicks. Sm. Willd. Hook. *H. muticum.* Dill. Sw. Woods and banks, among bushes. E.)

H. CURTIPEN'DULUM. Shoots upright, branched, leafy: leaves oblong-egg-shaped, acute, tiled: capsules egg-shaped: lid tapering to a point.

Dicks. H. S.—(*E. Bot.* 1444—*Musc. Brit.* xxii. E.)—*Dill.* 43. 69.

From two to four inches or more in length. Wide spreading, much branched, rigid. *Leaves* ending in a sharp hair-like point, closely tiled, broader and more dense at the ends of the shoots, so as to give them a blunt club-like appearance. *Fruit-stalks* hardly half an inch long, mostly two together, upright. *Capsules* cylindrical at first, and upright; when ripe egg-shaped and pendent. *Lid* short, beaked. *Involucrum* rising nearly up a third of the fruit-stalk. Weis. Recumbent, matted together. *Shoots* thick, rigid, irregularly branched. *Leaves* green, numerous. *Involucrum* long, pointed. *Capsules* yellowish. Dill.

(PENDULOUS FEATHER-MOSS. *Neckera curtipendula.* Hedw. Turn. Sm. *Anomodon curtipendulum.* Hook. Purt. Musc. Brit. E.) On the trunks of beeches, in woods. On stumps in Enfield Forest, near Southgate, and in Yorkshire. On large stones on the Marlborough Downs, Wiltshire; and on the rocks of Snowdon. Dillenius. (Mr. Tozer remarks (in Musc. Brit.) "In Wistman's wood, near Two Bridges on Dartmoor, it gives to the oaks a very singular appearance. Stunted branches, not larger than the wrist, often appear as large as the human body, from the very luxuriant

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* This fine Moss being easily attainable, and free from impurities, whence the trivial name, fishermen make use of it to scour their worms.

manner in which the Moss envelops them, frequently growing from eight to twelve inches long, and producing *thecæ* in the greatest profusion. E.)
P. Feb.—April.

H. ATRO-VI'RENS. Shoot ceeping, branched: leaves egg-spear-shaped, limber: capsules inversely-egg-shaped, fringed, drooping. Dicks. ii. 10.

(*Musc. Brit.* xxvi.—*E. Bot.* 2422. *E.*)—*Dill.* 43. 67.

(*Stems* variously branched, procumbent. *Leaves*, all of them slightly secund, broadly ovate, with an attenuated obtuse point, the nerve running nearly to the summit. *Capsule* ovate, cernuous. *Lid* conical. Musc. Brit.; not subulate. Hook. E.)

(DULL-GREEN FEATHER-MOSS. In Musc. Brit. *H. filamentosum*, and *attenuatum*, Dicks., are not allowed to be distinct from the present species; and Dill. 43. 67., usually referred to our plant, is therein said to be a very distinct species, from Virginia. E.) Woods, at the roots of trees, and on rocks in mountainous countries.

G. (1) *Shoots crowded: capsules upright.*

H. SERI'CEUM. Shoots branched, creeping: leaves oblong, hair-pointed, tiled, capsules cylindrical: lid taper-pointed, bent.

Hedw. Stirp. iv. 17—*Dill.* 42. 59—*Curt.* 126—(*E. Bot.* 1445—*Musc. Brit.* xxv. E)—*H. Ox.* xv. 5, *row* 4. 25—*Vaill.* 27. 3. *a. b.*—*Gars.* 639.

Grows so firmly to the trunks of trees that it can scarcely be taken away entire. Linn. *Shoots* long, creeping, crowded, greatly branched. *Branches* short, roundish. *Leaves* slender, very closely tiled, ending in long hairs. *Fruit-stalks* half to one inch high, lateral, crowded. *Involucrum* short, thick, scaly. *Capsules* long, nearly cylindrical, but thickest at bottom, upright. *Mouth* narrow, *fringe* white. *Lid* beaked. *Veil* pale. Weis. *Branches* mostly pointing one way. *Leaves* soft, shining. Dill. With two or three ribs, which distinguish it from *H. plumosum*.

(SOFT RIBBED-LEAVED FEATHER-MOSS. E.) *Leskea sericea*. Hedw. On the ground, on dry banks, trunks of trees, and walls. P. Sept.—April.*

H. MYOSU'RON. Shoots very much branched, awl-shaped, crooked, tapering upwards and downwards.

Hedw. Stirp. iv. 8—(*E. Bot.* 1566—*Musc. Brit.* xxv. E.)—*Dill.* 41. 50—*H. Ox.* xv. 5. 27—*Vaill.* 28. 4.

Stem two to four inches long; branched towards the end. *Leaves* closely tiled, egg-spear-shaped, hair-pointed. *Involucrum* short, slender, scaly. *Capsules* upright or leaning. Weis. *Shoots* thin, creeping, sending out thready brown roots. *Branches* numerous, cylindrical, tapering at each end. *Leaves* crowded, egg-shaped, pointed, smooth, shining, pressed to when dry, rather standing out when fresh. *Involucrum* slender; scales straight, longer than the leaves. *Fruit-stalks* reddish, half or three quarters of an inch long. *Capsules* cylindrical, upright, tawny when ripe. Dill.

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* (None of our Mosses afford a more beautiful carpet; it frequently exhibits all the richness and softness of silk, especially when dry. Curt. Some such plant as this is not only described, but depicted *ad vivum* in Gerard, as "*Muscus ex craneo humano*," and when thus found "upon the scull or bare scalpes of men and women, lying long in charnell houses, it is thought to be a singular remedie against the falling evill."—a remedy, truly, fit only to rank with other incomprehensible absurdities, superstitiously connected with the touch of executed malefactors, the blood of martyrs, the spells of witchcraft, or the black art itself, which may occasionally appear, by the aid of an overheated imagination, to work wonders. E.)

(Mouse-tail Feather-moss. *H. myosuroides.* Hedw. Roth. *H. myosuroides β.* Huds. and With. Ed. ii. *H. curvatum.* Sw. Dicks. Turn Sm. Hook. *H. myurum.* Brid. E.) Roots of trees, and on large stones in woods. Jan—March.

G (2) *Shoots crowded : capsules leaning.*

H. myosuroi'des. Plant creeping, very much branched ; branches cylindrical : leaves egg-spear-shaped, hair-pointed, upright, tiled : capsules cylindrical.

Dill. 41. 51—(*E. Bot.* 1567—*Musc. Brit.* xxv. E.)—*H. Ox.* xv. 6, *row* 3. 3 —*Vaill.* 27. 6.

Pale green. *Stem-leaves* almost three-cornered. Dill.

(This can only be confounded with the preceding species, (*H. curvatum.* Musc. Brit.; *H. myosuron,* With.), but its more slender habit, its leaves more acuminated, less concave, with their shorter nerve, reflexed margins, serrated nearly their whole length, will ever keep it distinct. Musc. Brit. E.)

(Creeping Mouse-tail Feather-moss. *H. myosuriodes,* Linn. (not of Hedw. Fid. Musc. Brit. E.) Woods at the roots of trees, and on stones and rocks. P. Jan.—March.

Var. 2. Leaves dark green, shining, hair-pointed.

Dill. 41. 53.

Leaves soft, dark green, shining, ending in hairs, which appear grey and reflexed when the plant is dry. Dill.

On old walls, as of Westham Abbey, near Stratford, Essex ; and on rocks on Emott pastures, Yorkshire. Dill.

H. ser'pens. Shoots creeping : branches thread shaped : leaves like bristles ; capsules cylindrical, crooked : lid taper-pointed.

(*E. Bot.* 1037—*Musc. Brit.* xxiv. E.)—*Dill.* 42. 64—*Vaill.* 28. 2. 6. 7. 8—*H. Ox.* xv. 5, *row the last,* 21, *p.* 625—*Buxb.* iv. 63. 2.

Shoots on the ground six inches, on trees two inches long. Neck. *Shoots* abounding with thick set-slender fibres forming broad patches, closely adhering to the earth. *Branches* very slender *Fruit-stalks* numerous, upright. *Capsules* cylindrical, leaning. *Lid* pointed. *Mouth* fringed Weis *Branches* numerous, short, generally simple. *Leaves* too small to be distinctly seen by the naked eye · green, not shining. *Involucrum* small, hairy. *Fruit-stalks* an inch high, or more, fine purple. *Capsules* long, straightish. *Veil* upright, broad at the base, silvery, shining. Dill. (Different leaves on the same individual have the nerve varying much in length ; yet in the older stems it will generally be found reaching to the point, and of a dark brown colour. Musc. Brit. E.)

(Creeping White-veiled Feather-moss. In Musc. Brit. we find *H. subtile,* Dicks., E. Bot. 2496, considered identical with this plant. E.)

On the ground under hedges, on the trunks of trees, especially young ones, on wood and stones. P. March—April.

H. VELUTI'NUM. Shoot creeping: branches crowded, upright: leaves awl-shaped.

(*E. Bot.* 2421—*Musc. Brit.* xxv. E.)—*Dill.* 42. 61—*Happ.* iii, *Hypn.* 6—*Fl. Dan.* 475—*Vaill.* 26. 9.

Leaves hairy at the end. *Fruit-stalks* lateral, an inch long. *Involucrum* scaly, inclosing the thick base of the fruit-stalk. *Capsules* cylindrical, or egg-shaped. *Lid* conical, short. Weis. *Shoots* crowded, interwoven, firmly adhering to the earth and the bottom of trees by the rust-coloured woolly fibres. *Stem-leaves* broader than the branch-leaves. *Involverum* short, hairy. *Lid* blunt. Dill. (Very nearly allied to *H. rutabulum*; so also with *H. intricatum* of authors. Musc. Brit. E.)

At the roots of trees, in woods, and hedges, in shady places and barren pastures. P.

(VELVET FEATHER-MOSS. E.) Capsules appearing in autumn, and coming to perfection in Feb. and March.

Var. 2. Smaller, shorter, of a paler green. R. Syn.

Shoots seldom more than three or four lines long. Leaves egg-shaped. Neck.

(H. CONFER'TUM. Stems branched: leaves erecto-patent, ovate, acuminate, concave, serrated; nerve reaching half-way: capsule ovate, cernuous: fruit-stalk smooth: lid rostrate.

Dicks. 11. 14—*E. Bot.* 2407—*Musc. Brit.* xvi.

A small var. growing on trees, has leaves occasionally sub-secund.

CLUSTERED FEATHER-MOSS. *H. confertum.* Dicks. Sm. Hook. *H. clavellatum.* Huds. With. to Ed. 7, and, according to Musc. Brit. not distinct from *H. serrulatum.* Hedw. Trunks of trees, rails, and on banks. P. Feb. E.)

HEPATICÆ.

JUNGERMANNIA.* (*Common Receptacle* of the *Fruit* none: *Perianth* or *Calyx* monophyllous, tubular, rarely wanting: *Capsule* four-valved, terminating a peduncle which is longer than the *perianth*. Hook. E.)

(Many of these plants afford singularly beautiful microscopic objects. For a fuller account of the parts of fructification, see vol. i. p. 349 and 370 of this work; and the subject elegantly illustrated in a Monograph of British *Jungermanniæ* by Dr. Hooker, wherein nearly one hundred species are described. E.)†

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* (Named by Ruppius and Micheli in honour of Lewis JUNGERMANN, a native of Leipsic, and Professor of Botany at Altdorf and Giessen in the early part of the seventeenth century. He published Illustrations of the Flora of Germany, and formed a fine Hortus-siccus, which is still preserved at Altdorf. E.)

† (And here we would observe, in respect to the wonderful discoveries of the microscope, especially in the Cryptogamic department of Botany, that by its aid we are enabled to

SUBDIVISIONS OF JUMGERMANNIA.

A. Plant unbranched and without a mid-rib.

B. 1. Leaves winged; fruit-stalks terminal.

2. Leaves winged; fruit-stalks lateral, or at the base.

C. 1. Leaves winged; leafits with appendages; fruit-stalks terminal.

2. *Leaves winged; leafits with appendages; fruit-stalks lateral, or* at the base.

D. Shoots tiled with leafits.

A. *Plant simple, without a mid-rib.*

J. **EPIPHYL'LA.** (Stem none: frond bluntly lobed, bearing the sheaths on its upper surface, with a little leaf at the base of each. E. Bot. E.)

Dicks. H. S.—(*Hook. Jung.* 47. E)—*Hedw. Theor.* 21 *and* 22 *and* 23—*E. Bot.* 771—*Schmid. Jung. f.* 1 *to* 6—*Dill.* 74. 41—*Fl. Dan.* 359—*Happ.* i. *Jung.* 1—*Mich.* 4. *Marsilea.* 1—*Col. Ecphr.* i. 331. 3—*Park.* 1314. 5—*Mull. Frid.* 2. 6 *and* 5.

Leaf variously scolloped and curled at the edge, pale green, firmly fixed to the mud by fibres from its under side. Weis. *Fruit-stalks* hollow, two inches high. Scop. Bears its fruit in the spring, but flowers in autumn, the barren flowers appearing like dots on the older leaves, and the fertile ones in the cylindrical sheaths. *Involucrum* of one leaf, irregular, wrinkled. *Germen* globular, smooth, on a very short fruit-stalk, which is ensheathed. Lower part of the involucrum fixed in a kind of groove. *Style* very short. *Filaments* on the germen of no determinate number. Knapp. *Leaf* short, roundish, moderately broad; segments blunt, shallow, fine green, pellucid. In winter a dark green head appears upon the middle of the leaf. In spring this head breaks forth from a valve on the surface of the leaf, circular and open at the top, afterwards cut into four shallow segments. Out of this the fruit-stalk rises, growing rapidly to the height of one and a half or two inches, white, pellucid, supporting a dark green globe which opens into four brownish and roundish segments, discharging a yellow brown powder mixed with fibres. This being done, the old leaf dies, and one or more young ones shoot out. Dill.

(In the situation of its *anthers*, observes Professor Hooker, *J. epiphylla* differs from every known species; they being placed singly, and immersed in small scattered tubercles upon the surface of the nerve. E.)

(Var. γ. *furcigera*, of the same author, is most abundant in autumn, when the apices of the fronds are produced in a very remarkable manner; forming branched elongations, which are considerably more narrow, and of a paler green than the rest of the frond, and have the ultimate

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recognize the power of the Creator great even in those things which ignorance regards as too minute to merit attention: for we thus perceive each little herb complete in its own peculiar structure, and beautiful in its symmetrical proportions, as the most magnificent productions of His hand: and to the observant eye, (the mental as well as corporeal vision), the stately monarch of the forest will be scarcely an object of more profound admiration, than the definitive Moss! E.)

branches always more or less forked. In the month of March, on plants of this description the branches become wider and of a deeper colour, and gradually partake more of the usual appearance of the plant: roots descend from their under sides, and the old fronds seem to be going into a state of decay: so that these curious processes are, in all probability, destined by nature as a mean of increasing the species, different from any that has yet been noticed in other *Jungermanniæ*. Hooker's Monograph. E.)

(Broad-leaved Jungermannia, or Star-tip. Moist hedges, abundant. E.) Ellingham Fen, near Bungay, by the direction post. Mr. Stone. (Var. γ. not uncommon. Cheddar Rocks. About Torquay. Hooker. E.) P. March—April.

J. PUSIL'LA. (Stem creeping: leaves imbricated in two ranks, angular, without auricles: sheaths plaited, bell-shaped: valves of the capsule dilated and jagged. E. Bot. E.)

(*Dicks. H. S.—Hook. Jung.* 69—*E. Bot.* 1775—*Schmid.* 22—*Hedw. Theor.* 18. 89, *to* 92—*Mich.* 5. 10—*Dill.* 71. 22. C. D. E. E.)

(The *plant* grows either in detached individuals; or thickly matted together so as to form light, pellucid, green patches of many inches in diameter, and firmly adhering to the ground by its *roots*. In the *calyx*, two remarkable peculiarities may be observed, in the widely-expanded mouth, and the stipulaceous processes, or *bracteæ*, as they might be called, at the base. The situation, too, of the *fructification* is very curious, unaccompanied by perigonial or perichætial leaves; and the whole plant diffuses an agreeable odour, not unlike that of the Sweet Sedge (*Acorus Calamus*. Hook. The large bell-shaped plaited sheath will at once distinguish this otherwise diminutive plant. Purt. E.)

(Dwarf Jungermannia. *J. pusilla*. Linn. Hedw. Huds. With. Relh. Hook. *J. angulosa*. Dicks. With. Not uncommon in shady lanes and on moist banks, especially in clayey soil. P. March—Oct. E.)

J. FURCA'TA. Frond strap-shaped, branched, entire, the ends forked and obtuse: (sheaths hairy. E.)

(*Hook. Jung.* 55 *and* 56. E.)—*Hedw. Theor.* 19 *and* 20—(*E. Bot.* 1632. E.)—*Dill.* 74. 45—*Vaill.* 23. 11—*Mich.* 4. 4.

In stony shady places where it thrives well, it grows in tufts, and the plants support one another, nearly upright, but when scattered amongst other Mosses on trees or on the ground it creeps. *Leaves* flat, compressed, very thin, pale green, pellucid, with a distinct vein running through the middle, more or less lobed, trifid or bifid at the end; lobes blunt. Dill.

(Forked Jungermannia. E.) On the ground, on rocks, in woods on the trunks of trees, and wet shady places, (forming large dense patches, closely appressed to the surface. E.) Bungay. Mr. Stone. (On the bark of a beech tree in Frith Wood, Painswick. Mr. O. Roberts.

Var. γ. *æruginosa*. *J. fruticulosa*. E. Bot. *J. furcata*. var. γ. Hook. *Riccia fruticulosa*. With. Ed 4. Remarkable for its colour, of a fine verdigris green, especially towards the ends of the frond, which are considerably dilated, and of a more delicate texture than the preceding. Hook.

Hook. Jung. 55. *f.* 22, 23.—*E. Bot.* 2514.

The *plant* becomes more decidedly æruginose when dried. It produces viviparous germs towards the ends of the branches. Br.

On the bottom of trunks of trees among moss. At Callington, near Edinburgh. Mr. Brown. P. April—May. E.)

J. SINUA'TA. Frond doubly wing-cleft, flat, indented, open, ending in two unequal lobes. Dicks. ii. 16.

(*Hook. Jung.* 45—*E. Bot.* 1476. E.)—*Dill.* 74. 44—*Mich.* 4. 3.

Leaves permanent deep green, thin, pellucid, flat, cut into winged segments. Dill. *Leaves* lying one upon another, in which way it appears to increase till it has covered a large patch of rock. (When moist and first gathered, it exhales a fine aromatic scent, which, uniting with the fragrance of certain Mosses, imparts to the air a peculiar and refreshing odour, often perceptible from grassy walks under trees or shadowy rocks, especially after showers. Prof. Hooker perceives no difference between this plant and *J. multifida*, except that the frond is somewhat wider, and the divisions frequently, but by no means constantly, so short that the margins appear to be here and there sinuate, rather than cut into segments. E.)

(Jagged Jungermannia. *J. multifida* var. *β sinuata.* Hook. E.) At the head of Elm Crag Well, under Bell Bank, near Bingley, Yorkshire. Dillenius; (a spot in which Mr. Hailstone detected it in fruit, April 1801. E.) Plentifully at the head of a spring in Middleton Wood, two miles from Leeds, on rocks and stones entirely under water. Mr. Wood. Stream head, between the Lodge farm and the Shepscombe road, near Painswick. Mr. O. Roberts. P. April. E.)

J. PIN'GUIS. Frond oblong, indented, slippery: (stem none. E.)

(*Hook. Jung. t.* 46. E.)—*E. Bot.* 185—*Schmid.* 35—*Dill.* 74. 42—*Mich.* 4. *Marsilea* 2—*Pluk.* 42. 2—*Vaill.* 19. 4.

Fertile plant smaller and more jagged, the other growing close to it, and by mutual support becoming upright. Dill. in R. Syn. 110. *Fruit-stalks* with a sheathing involucrum, white, pellucid, from one to three inches high. *Capsules* egg-shaped, black, shining, opening with four valves. Other *leaves* of a longer form not bearing capsules are set with green warty substances about the middle. Weis.

(Slippery Jungermannia. E.) Marshy places and bogs, (sometimes under water. E.) Bungay, Suffolk. Mr. Stone. (Pentland Hills. Dr. Greville. E.) P. April.

J. MULTIF'IDA. (Stem none: E.) frond with doubly winged clefts.

(*Hook. Jung.* 45—*Schmid.* 55. E.)—*E. Bot.* 186—*Dill.* 74. 43.

Leaves pale green; clefts blunt. *Involucrum* at the base of the leaves, and at the edges of the segments; cylindrical. *Fruit-stalk* about an inch long from the base of the leaves. Neck. (*Fronds* prostrate; *sheaths* white, which, with the great length of the *valves*, and their fringe-like termination, at once distinguish this species. Purt. E.)

(Many-lobed Jungermannia. E.) Woods and moist shady places. Caen Wood, near Highgate, and Charlton, Kent, Dillenius; and about Hampstead. Huds. P. April—May.

B. (1) *Leaves winged: fruit-stalk terminal.*

J. ASPLENIOI'DES. (Shoots somewhat branched: leaves crowded, in two rows, without auricles, obovate, obliquely, finely toothed. E. Bot. E.)

(*Hook. Jung.* 13—*E. Bot.* 1788—*Fl. Dan.* 1061. E.)—*Hedw. Theor.* 16. 17. 81 *to* 88—*Dill.* 69. 5—*Mich.* 5. 3, *no.*

Shoots three or four inches long; pale green. *Leaves*, upper edge fringed with little teeth, alternate. *Fruit-stalks* terminal, an inch long, rising out of a sheathing involucrum. *Capsules* egg-shaped, purplish black, shining. Weis. Trailing, sometimes branched. *Leaves* pellucid, pale green, without veins. I have never observed any roots. Dill.

(SPLEEN-WORT JUNGERMANNIA. SWEET-SCENTED MOSS. E.) Road sides and on trees, in woods and wet shady places; also near springs and rivulets, when it is sweet scented. (It grows plentifully on the sides of the Holy Well of St. Winifred, in Flintshire: also at the spring consecrated to the Virgin Mary, near the chapel, in the sequestered dell of Wyg-fair, (Mary's bower), Denbighshire. E.) Earsham and Sexton woods, near Bungay. Mr. Stone. (Var. 1 and 2 on the bank between the Beech lane and Longridge, Painswick. Mr. Oade Roberts. E.)
P. Feb.—April.

Var. 1. Leafits more crowded.

Fl. Dan. 1061—*Dill.* 69. 6—*Mich.* 5. 1, *and* 2—*Vaill.* 19. 7—*H. Ox.* xv. 6, *row* 2. 12—*Scop.* 62, 1337, *instead of* 1338, *at* ii. 7. 321.

Plant from one to two inches long. *Fruit-stalks* twelve lines long, terminating. Neck. *Shoots* more branched than in one, and shorter. *Leafits* smaller and more crowded. Weis.

In the same situations with the preceding.

Var. 2 Leafits not fringed.

This variety was found by Mr. Stackhouse growing under the water of the celebrated spring called Holywell, in Flintshire.

J. SCALA'RIS. (Stem creeping, simple: leaves round, concave, entire, emarginate: stipulæ broadly subulate: fruit terminal: calyx immersed in the leaves. Hook.

Hook. Jung. 61—*E Bot.* 605.

Plants growing in dense, wide patches, pale green. *Stems* scarcely half an inch long, procumbent. *Leaves* distichous, crowded, spreading, semi-amplexicaul, the margin entire, rarely notched. *Peduncle* a quarter to half an inch high. *Calyx* concealed by the perichætial leaves. Grev.

FERN JUNGERMANNIA. *J. scalaris.* Schrad. Hook. which has often been mistaken for *J. lanceolata*, Linn. Hook. t. 18. a species which abundantly differs, not only in the absence of stipulæ, but in the large and naked calyx, and is at least a very doubtful native of Britain *J. lanceolata.* E. Bot. Prof. Hooker considers *J. scalaris* of Schmidel to be no more than the gemmiferous state of *J. Trichomanis*, which has not unfrequently been so misunderstood. Abundant, upon a loamy soil, in woods, wastes, and hedge banks. P. April—Oct. E.)

BIDENTA'TA. (Stem procumbent, branched: leaves broadly ovate, decurrent, bifid at the apex; the segments very acute, entire: stipulæ bi-trifid and laciniate: fruit terminal: calyx oblong, subtriangular: the mouth laciniate. Hook. E.)

(*Hook. Jung.* 30—*E. Bot.* 606. E.)—*Dill.* 70. 11—*Fl. Dan.* 888—*Vaill.* 19. 8—*H. Ox.* xv. 6, *row* 2. 47—*Mich.* 5. 12—*Pet.* 13. 4.

Involucrum terminal, obscurely three-cornered. *Fruit-stalk* whitish, tender, an inch long. Neck. *Shoots* one to three inches long, generally branched. Weig. *Leafits* with two teeth at the end forming a half moon. Scholl. *Leaves* pale green, pellucid, alternate, fixed by a broad base to the rib, pointing upwards. *Fruit-stalks* leafy at the base. *Capsules* black brown. Dill. (Growing in more or less crowded patches of some inches in diameter. E.)

(This species is said to be aromatic. The fig. in E. Bot. omits to represent the stipules, which Hooker observes to be always present, though scarcely distinguishable to the naked eye. E.)

(BIDENTATE JUNGERMANNIA. E.) Woods, moist heaths, and shady banks. A. Oct.—Dec.

J. QUINQUEDENTA'TA. Shoots branched: leafits with five teeth.

(*Hook. Jung.* 70—*E. Bot.* 2517. E.)—*Dill.* 71. 23.

Involucrum with five teeth, a line or more in length. Neck. *Shoot* sometimes simple, taking root as it creeps along. *Capsules* appear in autumn; it blossoms in the spring. *Leaves* four-sided, teeth or scollops from one to six. *Shoots* crowded, one inch to one inch and half long, in general branching into forks. Web. Creeping, crowded, sometimes branched. *Leaves* pellucid, numerous, broadest at the base, pleasant green, lower ones ending in three sharp teeth, upper ones in four or five. *Fruit-stalk* terminating. *Involucrum* toothed, angular. *Capsule* black. Dill.

(FIVE-TOOTHED JUNGERMANNIA. *J. quinquedentata.* Linn. Huds. *J. barbata,* Schreb.; which latter name Hooker has adopted, believing the other inapplicable, and that, except by accident or injury, five segments are never seen to exist on the leaves of this plant. E.) In patches of various dimensions, in woods and wet shady places. About Tunbridge, and in the west of Yorkshire. In the ascent to Ffynnon frech, near Llanberris. Mr. Griffith. (On the rocks of Cromford Moor, near Matlock. Mr. Teesdale. E.) P. April.

J. MACRORHI'ZA. Shoots upright, branched: leafits alternate, slightly notched, open. Dicks. ii. 16.

(*Hook. Jung.* 27—*E. Bot.* 1022. E.)—*Dicks.* 5. 10.

Leaves, the uppermost purplish. *Root* large, branched. Dicks. (*Stem* erect, branched; *leaves* loosely imbricated, patent, obcordate, emarginate; *fruit* terminal; *cal.* ovate, toothed, immersed in the leaves. Hook. Ehrhart compares the leaves to a heart cut out of paper: when growing in water the plant loses its purplish hue, and becomes dark green.

PURPLE-TIPPED JUNGERMANNIA. *J. emarginata.* Linn. Hook. Amidst moist alpine rocks abundant. E.) Higher mountains of Scotland. Crib y Ddescil. Mr. Griffith.

J. SPHŒRO-CEPH'ALA. Leafits with two teeth: fruit-stalks terminal or lateral, supporting a barren globular flower.

Dill. 31. 6.

Small, whitish, creeping, leaves pointing two ways. *Leafits* notched at the end, and the segments sharp-pointed. Scop. *Roots* extremely slender and numerous, from the mid-rib, and fixing the plant firmly to the ground. *Fruit-stalks* short, terminal and lateral. *Capsules,* or powdery heads, pale green. *Leafits* tender, pellucid, cloven at the end, opposite. I have seen no other capsules than these powdery heads. Dill.

(PALE GLOBULAR-FLOWERED JUNGERMANNIA. E.) *Mnium fissum.* Linn. *J. fissa.* Scop. Lightf. In wet places about Highgate, and on Shooter's Hill near Eltham, and especially in a rivulet running through Oldfall Wood, between Highgate and Muswell Hill. Ray. In Scotland. Lightfoot. Feb.—April. Dill.—P. March—Oct. Huds.

B. (2) *Leaves winged : fruit-stalks lateral, or at the base.*

J. SPHAG'NI. Shoots taking root: fruit-stalks lateral: leafits roundish, very entire, tiled, pointing one way. Dicks. 6.

(*Hook. Jung.* 33. E.)—*E. Bot.* 2470—*Dicks.* 1. 10.

Shoots an inch or more in length; sometimes branched, sometimes not, bending in various directions, and here and there putting forth fibrous roots. *Leaves* roundish, brownish yellow, convexo-concave, all pointing one way, though placed in two rows, alternately lying on each other. *Capsule* one or two, issuing from tho same side of the shoot near the top or the bottom. *Fruit-stalk* pellucid, white, a quarter of an inch high. *Sheath* whitish, oblong, brownish at the top. *Capsule* small, roundish, brown, but rarely seen. Differs from *J. polyanthos.* Linn. in the leaves being of a brownish yellow, pointing one way, and also in the fibrous roots. Dicks. (Remarkable for its large radicular fibres. Grev. The *leaves* may always be known from those of other *Jungermanniæ*, by the firmness of their texture, by the peculiar smallness of the cellules, combined with their general orbicular shape. Hook. E.)

(BOG-MOSS JUNGERMANNIA. E.) Marshy places, frequently adhering to *Sphagnum palustre*, near Croydon, Surry. (Belton, near Yarmouth. Mr. Turner. New Forest, Hampshire, most abundant, in fructification. Mr. Lyell, in Hook. Jung. E.) May.

J. VITICULO'SA. (Leaves flat, naked, entire, ovate, slightly decurrent, bifariously arranged: stipulæ small, nearly circular, laciniate, acuminate. E.)

(*Hook. Jung.* 60—*E. Bot.* 2513. E.)—*Mich.* 5. 4—*Vaill. a. b. between f.* 7 *and f.* 2.

Shoots three inches long; branches one or two inches. *Leafits* egg-shaped, yellowish brown, or only green, when growing in the shade, the edges very entire. *Peduncle* an inch or an inch and a half long, white, cylindrical, cellulose, tipped with the brown, oblongo-ovate *capsule.*

FLAT-LEAVED JUNGERMANNIA. Grows in loosely matted patches of various size, rendered conspicuous by their yellowish brown colour. Not uncommon in various subalpine parts of England, Scotland, and Ireland; sometimes upon Mosses. Hook. E.) P. March—April.

J. POLYAN'THOS. (Leaves horizontal, rotundo-quadrate, flat, entire, and emarginate: stipulæ oblong, bifid; fruit upon very short branches, arising from the lower surface of the stem: calyx much shorter than the calyptra, bi-labiate, laciniate. Hook. E.)

(*Hook. Jung.* 62—*E. Bot.* 2479. E.)—*Dill.* 70. 9.

Shoots about one inch long, winged. *Leafits* alternate, egg-shaped, with a blunt point. *Fruit-stalk* half an inch high, from the mid-rib and the origin of the branches. *Capsule* brown red, egg-shaped, Weis. short, branched, stiff. *Leafits* roundish, short, thin, pellucid, tiled. *Involucrum* white, short, four-cleft.

(MANY-FLOWERED JUNGERMANNIA. E.) Woods, moist shady banks, amongst moss, and on the sides of rivulets. Lead Hill, and between Dorking and Cold Harbour, Surry, in marshy places. (On stones in rapid rivulets: Bilston Burn. Mr. G. Don. Grev. Edin. E.)
P. March—April.

J. BICUSPIDA'TA. (Stem procumbent, branched in a stellated manner: leaves subquadrate, acutely bifid: the segments acute, straight, entire: fruit terminal: calyx oblong, plicate, the mouth toothed. Hook. E.)

(*Hook. Jung.* 11—*E. Bot.* 2239. E.)—*Schmid.* 63—*Dill.* 70. 13—*Mich.* 6. 17—*Schmid. Jung.*

(*Stems* very slender, half an inch to one inch in length. *Leaves* extremely minute, distant, alternate, very pale green, cleft half way down into two acute segments: *peduncle* half an inch long, very slender: *calyx* large in proportion to the plant. Grev. E.) *Shoots* less branched than in *J. bidentata,* and more limber, from half to one inch long. Weis.

(FORKED JUNGERMANNIA. Not E. Bot. 281, (as quoted in former Editions), which Prof. Hooker considers to be a distinct species, closely allied to *J. bidentata.* E.) Shady places and moist woods.
P. March—April.

J. MINU'TA. Shoots upright, branched: leafits with appendages underneath: leaves roundish. Dicks. ii. 13.

(*Hook. Jung.* 44—*E. Bot.* 2331. E.)—*Dill.* 69. 2.

Very slender, branched. *Leafits* not distinguishable by the naked eye, alternate, roundish, pellucid, in single rows. *Roots* very fine woolly filaments fixed to the back of the mid-rib. Dill. (*Plant* brownish green colour; has a peculiarly neat appearance, from the *leaves* being most regularly disposed, all placed in a nearly horizontal direction, and, as it were, in a pinnated manner: lower leaves unequally two-lobed. Hook. E.)

(MINUTE AURICLED JUNGERMANNIA. E.) Amongst moss in the Highlands of Scotland. (Upon Cairn-gorum and Ben Nevis. Hooker. Summit of Carnedd Llewelyn, N. Wales. Mr. Griffith. (April—June. E.)

J. VENTRICO'SA (Stem prostrate, somewhat branched: leaves patent, subquadrate, obtusely and broadly emarginate, their sides incurved: fruit terminal: calyx oblong; the mouth contracted, plicated, toothed. Hook. E.)

(*Hook. Jung.* 28—*E. Bot.* 2568. E.)—*Mich.* 5. 15.

Leaves more deeply cloven than represented by Micheli. Dicks. (May be distinguished from *J. excisa,* by its larger size, more branched habit, the involute margins of the leaves, and the abundant, and very conspicuous gemmaceous globules, so compact as to resemble little balls; and principally produced in early summer. Hook. E.)

(GLOBE-SHEATHED JUNGERMANNIA. E.) Woods, and shady rocks.

J. SPINULO'SA. Shoots upright, branched: leafits inversely egg-shaped, sharply toothed. Dicks. ii. 14.

(*Hook. Jung.* 14. E.)—*Dill.* 70. 15.

Shoots upright, or reclining, but not creeping; branches numerous. *Leaves* alternate, not closely set, dull green, pellucid, the upper ones smaller, with two or three teeth at the end; lower ones with more teeth. Dill. (Barren fructification unknown: fertile, lateral upon the *surculi*, and frequently arising from the *axillæ* of the branches. Hook. *Teeth* acute, mostly on one side the leafit.

(An elegant var. has been observed scarcely exceeding an inch in length, slender, and minute. E.)

(SHARP-TOOTHED JUNGERMANNIA. E.) On Snowdon. Dillenius. On the mountains of Scotland. Dickson. On Crib y Ddescil, and Cader Idris. Griffith.

J. PAUCIFLO'RA. Shoots creeping, very much branched, thread-shaped: fruit-stalks lateral: leaves bowed in, deeply divided: sheaths conical, remote. Dicks. ii. 15.

(*E. Bot.* 2482? E.)—*Dicks.* 5. 9.

Leaves alternate, remote, cloven down to the base. *Segments* equal, strap-awl-shaped, bluntish, concave, transparent, in the instertices opake. *Fructifications* solitary, remote. *Sheaths* conical. *Fruit-stalks* as long again as the involucrum. Nearly allied to *J. multiflora*, and at first sight greatly resembling it, but differs from it in the number of its fruit-stalks, &c. Dicks.

(FEW-FLOWERED JUNGERMANNIA. E.) Near Croydon, growing on *Sphagnum palustre*. Dickson. Yorkshire. Mr. Teesdale. (Norfolk and Suffolk. Mr. Turner. E.)

C. (1) *Leaves winged: leafits with appendages: fruit-stalks terminal.*

J. UNDULA'TA. (Stem erect, subdichotomous: leaves unequally two-lobed, waved, entire: lobes roundish, conduplicate, lower ones largest: fruit terminal: calyx oblong, incurved, compressed, the mouth truncate, entire. Hook. E.)

(*Hook. Jung.* 22—*E. Bot.* 2251. E.)—*Vaill.* 19. 6—*Dill.* 71. 17.

(*Stems* one to five inches long, mostly naked below. *Leaves* distichous, lower ones distant and small, upper ones larger and imbricated; *colour* varying from dull green to purplish: *Peduncle* about half an inch long. *Calyx* compressed and incurved towards the mouth which is entire and truncate. Grev. E.)

(WAVY-LEAVED JUNGERMANNIA.) Shady places, moist rocks, and in small streams. E.) P. March—April.

J. NEMORO'SA. Shoots doubly winged above: leafits fringed.

(*Hook Jung.* 21—*E. Bot.* 607—*Hedw. Theor.* 15—*Dill.* 71. 18—*Mich.* 5. 8 —(*Dill.* 71. 19—*E. Bot.* 2437—*J. resupinata: fid. Hook. J. nemorosa var.* E.)

Leafits broad at the base, and enveloping the mid-rib, so that there appears no interstice between the leafits and the appendages or coloured scales placed above them. Weis. *Plant* mostly about one and a half inch long, branched or unbranched. *Leafits* oblong, numerous, green, pellucid. *Involucrum* terminating, broad; at first leaning. Dill. (The strongly dentato-ciliated margins of the leaves in *J. nemorosa* will readily distinguish it from *J. undulata*; and *J. umbrosa*; Hooker; who suspects our author to have mistaken a purple var. β *purpurascens*, f. 16. for the real *J. purpurea* of Weis, (*Mnium Jungermannia.* Linn. E.)

(WOOD JUNGERMANNIA. E.) Woods and moist shady places in Westmoreland. (Pentland Hills. Greville. E.) P. March—April.

J. RESUPINA'TA. Shoots doubly winged above: leafits finely scolloped, tiled, circular.

(*Hook. Jung.* 23. E.)

(*Plant* pale green. *Stems* not an inch long, procumbent, except the fructified extremities. *Leaves* spreading, the lobes nearly equal, except in the lower ones, where the upper lobes are smallest, margin entire. *Peduncle* nearly half an inch long. *Calyx* compressed at the mouth, incurved, and minutely denticulate. Grev. Much smaller than *J. undulata.* Hook. E.)

(RECLINING JUNGERMANNIA. E.) In clefts of rocks, and on turfy heaths. P. April.

J. AL'BICANS. (Stem erect, subdivided: leaves unequally two-lobed, lobes conduplicate, with a pellucid line in the middle, serrated at the extremity; lower ones larger, sub-cymitar-shaped; upper ones oblong-ovate, acute: fruit terminal: calyx obovate, cylindrical; the mouth contracted, toothed. Hook. E.)

(*Hook. Jung.* 25—*E. Bot.* 2240. E.)—*Dill.* 71. 20—*Vaill.* 19. 5.

Shoots one to two inches long, not creeping, but reclining. Weis. Forming dense patches, one shoot lying on another. *Leafits* two-rowed, half a line long, and a quarter broad, very entire; ending in a blunt point. Besides these larger leaves, there is another set only half the size on the upper side of the mid-rib, one at the base of each larger leaf. *Involucrum* cylindrical, white, terminal. Barren stems reddish at the ends, and containing minute greenish globules filled with a powder. Poll. Whitish when dry. Dill.

(WHITENING JUNGERMANNIA. Under this species Hooker includes *J. varia.* E.) Woods and wet shady places. P. March—April.

J. COCHLEARIFOR'MIS. Somewhat cylindrical, rather upright: leafits concave, roundish.

Hook. Jung. 21, *f.* 16—*E. Bot.* 2500. E.)—*Dill.* 69. 1—*Mich.* 5. 16, *but more evidently fringed than in our plants.*

Leafits pointing from two opposite lines, nearly egg-shaped, transparent, smooth, embracing the stem, pointed, each furnished with a very small earlike appendage. I have never seen any other than barren plants. Linn. *Stems* hollow, reddish. Scop. *Shoots* creeping, strap-shaped, the ends rising upwards. *Leafits* about a line in diameter, flat. Poll. Varies greatly in appearance. The young plants in wet places crowded, upright. *Leaves* very small, roundish, nearly flat, pellucid, alternate, without appendages. When older, the leaves are large, more closely set, convexo-concave, with scaly appendages at the base, resembling the leaves in shape. In some plants, when fully grown, the leaves are roundish; in others spoon-shaped; and in another variety, gathered on the banks of mountain lakes, I have found the leaves green, pellucid, not crowded, almost embracing the stem. *Shoots* sometimes branched, from one inch to a foot long when growing in running water. Have not found it in flower. Dill. Have frequently found it with fertile heads. Huds. I have found the capsule filled with ripe seeds, but closely enveloped by the leaves at the extremity of the plant, and probably never rising above them.

Since writing the above I have received a specimen from Mr. Griffith in fruit, the fruit-stalk more than an inch long. He found it for the first time in this state, last summer, when the rills were dry or nearly so, and thence concludes that it only flowers in very dry seasons. Possibly the very tender and delicate fruit-stalk may be destroyed in rainy seasons.

(Shell-leaved Jungermannia. *J. cochleariformis.* Weis.) *J. purpurea.* Scop. Lightf. With. Ed. ii. *Mnium Jungermannia.* Linn. (*J. nemorosa var. β. purpurascens.* Hook. who considers this species as scarcely differing from *J. nemorosa a,* but in the deep purple colour of the whole plant. E.) Bogs, rivulets, and cascades in mountainous situations, and in ditches and turfy heaths. On Cader Idris, Snowdon, and Glyder. Dillenius. In moist peat earth on a mountain called Cowsand, and on the sides of hills in the forest of Dartmoor, Devon. Mr. Newberry. In all the rills near Snowdon. Mr. Griffith, (who says his plant is certainly the same that he has seen in all collections, without fructification, as *Mnium Jungermannia.* E.) P. March—Aug.

Var. 2. Leafits very entire.

Smaller than the preceding, upright, green, not purple. Seems to be the variety mentioned by Dillenius as growing in bogs. Specimens from J. W. Griffith, Esq.

C. (2) *Leaves winged: leafits with appendages: fruit-stalks lateral or at the base.*

J. ova'ta. Shoots creeping, branched: leafits egg-shaped, alternate, with appendages underneath: sheathing the involucrum inversely egg-shaped. Dicks. ii. 11.

Dicks. 8. 6.

Fruit-stalks terminal and lateral. *Involucrum* ragged at the top. Dicks.

(Ovate-leaved Jungermannia. E.) On barren heaths.

J. triloba'ta. (Stem creeping, flexuose, branched: leaves imbricated above, ovate, convex, obtusely three-toothed: stipulæ broadly subquadrate, crenate: fruit arising from the lower part of the stem: calyx oblong, subacuminate, the mouth cleft on one side. Hook. E.)

(*Hook. Jung.* 76—*E. Bot.* 2232—*Mich. t.* 6. *f.* 2. E.)

About an inch long, trailing, branches distant. *Leafits* with three to five shallow clefts at the end. *Involucrum* about two lines long, terminating. *Fruit-stalks* very short. Weis.

(Three-lobed Jungermannia. *J. radicans* E. Bot. Unknown to Dillenius, whose synonym, according to most authors, Prof. Hooker announces to belong to *J. quinquedentata.* 'Grows in large patches, often a foot in diameter, in subalpine situations, but is seldom found in fructification. E.) P. March—April.

J. rep'tans. Shoots doubly compound: fruit-stalks lateral: leafits four-cornered, snipped towards the end: stipulæ four-cleft.

(*Hook. Jung.* 75—*E. Bot.* 608. E.)—*Schmid.* 68—*Dill.* 71. 24—*Schmid. Jung. f.* 8. 13.

Fruit-stalk from the base. *Capsules* blackish, shining. Dill. *Appendages* underneath the leafits. Neck. Tender, creeping, irregularly branched, limber, about one inch long. *Leafits* very minute, ending in three or four little teeth: *Involucrum* three-sided, whitish, toothed. *Fruit-stalk* white, shining. *Capsules* oblong-egg-shaped. Weis. Dill.

(A beautiful species universally dispersed throughout Europe; in habit closely allied to *J. trilobata,* having, like that plant, its *leaves* imbricated on the upper surface, large dentate *stipules, flagella* beset with leaf-like scales, and a whitish membranaceous *calyx,* proceeding from the under part of the stems. Hook. E.)

(CREEPING JUNGERMANNIA. E.) Moist shady places, and woods.
P. Dec.—April.

J. MULTIFLO'RA. Shoots creeping, branched: leafits alternate, in pairs, bristle-shaped, equal. Linn. Leaf simply winged, flowering at the base. Huds. 510.

(*Hook. Jung.* 8. E.)—*Dill.* 69. 4.

Shoots thread-shaped, half to one inch long. *Leafits* short. Weber. *Involucrum* central, numerous, crowded, white, four-cleft. *Fruit-stalks* slender, white, long. *Capsules* large, reddish brown. Dill. (*Stems* exceedingly slender, in tufts, or solitary among *Sphagna,* half an inch to two inches long, irregularly branched in a distant lax manner. *Leaves* very minute, setaceous, in pairs. *Colour* pale green. *Peduncle* a quarter of an inch long. Grev. E.)

(MANY-FLOWERED JUNGERMANNIA. *J. setacea.* Web. Hook. E.) Shooter's Hill, near London. Dillenius. (Moist shady places. Auchendenny woods. Grev. Edin. E.) P. March.

D. *Shoots tiled with leafits.*

J. COMPLANA'TA. Shoots creeping: leafits doubly tiled, with little scales underneath: branches of an equal breadth throughout.

(*Hook. Jung.* 81—*E. Bot.* 2499. E.)—*Fl. Dan.* 1062—*Curt.*—*Dill.* 72. 26 —*Mich.* 5. 21.

Leafits circular. *Fruit-stalks* terminal, very short. Neck. From one to two inches long, flat, irregularly branched, adhering close to the bark of trees in broad patches; soft to the touch and flaccid when wet. *Fruit-stalks* hardly a line long, rising from the origin of the branches as well as from their extremities, out of a scaly involucrum, which is lopped at the end. *Capsule* small, black, of short duration. Weis. Dill. (*Fructification* abundant at all seasons. Grev. The circumstance of the roots most frequently proceeding from the surface or *pagina,* (not from the margins,) of the leaves, in small tufts, is highly curious. Hook. E.)

(FLAT JUNGERMANNIA. E.) Trunks of trees, in hedges and thickets, flourishing most in moist situations. P. Jan.—April.*

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* (The wonderful structure of these diminutive vegetables can only be discovered under the microscope; and the capsules of the present species, as Curtis observes, afford, when ready to burst, and aided by the point of a needle, much entertainment; for the elastic hairs inside will instantly appear in motion, and throw off the globules attached to them in great numbers, and with considerable force. E.)

J. DILATA'TA. Shoots creeping: leafits doubly tiled, with little scales underneath: branches broader towards the end.

(*Hook. Jung.* 5—*E. Bot.* 1086. E.)—*Schmid.* 67—*Dill.* 72. 27—*Vaill.* 19. 10 —*Mich.* 6. 6—*Neck. Meth.* 1. 3, *at p.* 273.

Leafits circular, in a double row, Neck.; convex, smaller, and *shoots* narrower than in *J. complanata*. *Involucrum* terminating the branches, three-cornered; Neck.; colour dark green, or reddish. *Fruit-stalk* one line long. Weis. *Shoots* strap-shaped, lying on one another, forming dense roundish patches. *Branches* distant, winged. *Involucrum* mostly terminating, half a line long. *Fruit-stalk* very short. *Capsule* minute, globular. Pol.

(The barren fructification may be seen on the same individual as the fertile, though it is far more abundant on separate plants. In this instance, (and some others,) the genus is to be considered both monoecious and dioecious. Hook. E.)

(DILATED JUNGERMANNIA. *J. tamariscifolia*. Schreb. Schmid. E. Bot. E.) Trunks of trees, closely adhering to the bark. P. March—April.

J. TAMARIS'CI. Shoots doubly compound: fruit-stalks terminal: leafits roundish, with appendages underneath: stipulæ egg-shaped, notched.

(*Hook. Jung.* 6—*E. Bot.* 2481. E.)—*Schmid.* 67—*Dill.* 72. 31—*Mich.* 6. 5 —*Vaill.* 23. 10.

Greatly resembles *J. dilatata*, Neck.; but the shoots are much longer, crowded and lying one upon another, more slender, more branched; *branches* of a uniform breadth, blunt at the ends, not closely attached to the tree on which it grows, but rather hanging down. The mid-rib is more exposed to view, and on the under side appears jointed, and covered with small scales cloven at the end. *Fruit-stalk* terminating, very short. *Capsule* brown yellow. Weis. Dill. *Leafits* circular, very entire. *Capsule* very minute. Pol. (By no means so common as the last. Patches conspicuous from their purplish colour, varying to green in shady situations. Hook. E.)

(TAMARISK JUNGERMANNIA. *J. tamariscina*. E. Bot. *J. tamariscifolia*. With. Ed. 3. &c. Hooker alledges sufficient reasons for adopting the alteration now made: considering the name *tamarisci*, as used by Linnæus in Syst. Nat. and Sp. Pl. (though not in Fl. Suec.) as most applicable. E.) Trunks of trees and rocks. (A rare plant in Lancashire, but found in a fir wood near Childwall. Mr. Shepherd. Covering the Juniper bushes on the Pentland Hills. Greville. E.) P. Feb.—March.

J. EX'CISA. Shoots creeping, branched: fruit-stalks terminal: leaves tiled, concave, notched at the end: sheathing involucrum inversely egg-shaped. Dicks. ii. 11.

(*Hook. Jung.* 9—*E. Bot.* 2497. E.)—*Dicks.* 8. 7.

Shoots cylindrical, closely tiled with leaves. *Involucrum* toothed at the top. Dick.

(NOTCHED JUNGERMANNIA. E.) Moist shady woods in England. (Highland mountains, and marshes, common. Hooker. E.)

J. **PLATYPHYL'LA.** (Fronds procumbent, much branched, spreading, triply auricled beneath: leaves heart-shaped, obtuse: sheaths toothed.

(*Hook. Jung.* 40—*E. Bot.* 798. E.)—*Vaill.* 19. 9—*Dill.* 72. 32—*Mich.* 6. 3 *and* 4—*H. Ox.* xv. 6, *row* 2. 44—*Happ.* iii. *Jungermannia.*

About a finger's length, growing in close patches; doubly winged. *Leafits* egg-spear-shaped, tiled in a double row, with appendages underneath. Weis. *Fruit-stalk* short, lateral and terminal. *Involucrum* blunt, compressed, about one line in height. *Capsules* minute, upright, smooth, shining, yellowish. Pol. Grows in large tufts on walls and trunks of trees, one layer upon another, fixed only by the ends, irregularly branched. *Leaves* crowded, tiled, pellucid, thin, dark green, the edges and the ends turned down. Dill. (Rarely found in fruit. E.)

(RECURVED JUNGERMANNIA. E.) On trunks of trees, and on walls. Old walls, Bungay. Mr. Stone. P. March—April.

Var. 2. Leaves shorter and rounder. Hall. n. 1872. Lightf. 785.

Dill. 72. 33—*Mich.* 6. 1.

Leaves heart-shaped, rounder than in the preceding. Mid-rib entirely covered underneath by scales. *Branches* at right angles to the shoot. Have not seen it in flower. Dill.

Trunks of trees. Dillenius.

(J. **TOMENTEL'LA.** Stem nearly erect, bi-pinnate: leaves nearly flat, unequally two-lobed, cut into numerous capillary segments; superior lobes bipartite, inferior, minute: stipulæ subquadrate, laciniate: fruit axillary: calyx oblong, cylindrical, hairy, open at the mouth. Hook. E.)

(*Hook. Jung.* 36—*E. Bot.* 2242. E.)—*Dill.* 73. 35.

Primary branches alternate, secondary ones alternate likewise, but so closely set as to appear nearly opposite; larger and more numerous in the barren than in the fertile plants. *Leaves* pale green, woolly, extremely crowded, and very minute. *Involucrum* in the angles of the branches, long, woolly, straw-coloured. *Fruit-stalk* white, pellucid. *Capsule* oblong, black. Dill. (It bears considerable affinity to *J. ciliaris* of Linn. but besides the great difference in colour, (*J. ciliaris* being always of a rich yellow brown,) our present plant is much less convex in the upper surface of its leaves, which are divided into four narrower segments, and the laciniæ are considerably longer, and more numerous, as well as greatly more branched. Hook. E.)

(DOWNY-LEAVED JUNGERMANNIA. *J. tomentella.* Ehrh. Dicks. Hook. *J. ciliaris.* Weis. Huds. With. Lam. not of Linn. Growing in patches often several feet in diameter, and conspicuous from its extremely pale green colour. E.) Moist woods and heaths, and wet mossy places near rivulets in Yorkshire, Cumberland, and Westmoreland; in a small current of water which runs through Oldfall Wood between Highgate and Muswell Hill, about Chichester, Sussex, and Dorking, Surry. Ray, and Dillenius. In the Highland Mountains near Aberfeldy. Dickson. On a dry sandy bank on Brome Heath, near Bungay. Mr. Stone. (Very abundant at Allan's Ford, near Durham. Mr. Thornhill, in Hooker. E.) P. March—April.

J. VA'RIA. Shoots nearly upright, tiled, pointing two ways: leafits deeply divided.

Dill. 73. 35—*Mich.* 5. 9.

Shoots short, stiff, brittle; frequently with green or yellowish globules at the end. *Fruit-stalks* white, shining, five lines long, terminal. *Involucrum* egg-shaped, with four teeth. *Capsules* globular, black and shining. Pol. At first creeping, undivided, winged with leaves; when older, rising up somewhat branched, the leaves surrounding the branches. Dill.

(VARIABLE JUNGERMANNIA. Considered by Prof. Hooker as synonymous with *J. albicans.* E.) Woods and heaths in moist shady places. P. March—April.

(J. CILIA'RIS. Stems prostrate, winged: leaves alternate, two-ranked, convex above, irregularly palmate, fringed: sheaths cylindrical, smooth, obtuse. E. Bot. E.)

(*Hook. Jung.* 65—*E. Bot.* 2241. E.)—*Dill.* 69. 3.

(Grows in densely-matted, large, purplish-brown patches. Hook. *Stems* one to five inches long, irregularly branched in a somewhat pinnate, or bi-pinnate manner: *leaves* beautifully ciliate as well as the *stipules*, close and imbricated; reticulation large. *Peduncle* scarcely twice as long as the *calyx*, which is obtusely obovate, much contracted at the mouth. Grev. E.)

(CILIATED JUNGERMANNIA. E.) *J. ciliaris.* Linn. Hook. Sm. *J. pulcherrima.* Web. Sw. With. E.) On heaths in England and Scotland. Dickson. (Sides of Lochain y Gair. Mr. Brown. (Pentland Hills. Greville. E.) P. March.

J. ADUN'CA. Shoots thread-shaped, bent at the ends: leaves expanding, pointing one way: fruit-stalks terminal, short. Dicks. iii. 12.

(*Hook. Jung.* 4—*E. Bot.* 2418. E.)—*Dicks.* 3. 8.

Leaves nerveless, cloven, points acute; three together, or rather pointing in three directions. Griff. (*Stems* scarcely so thick as a pack-thread, of a bright reddish-brown colour, several inches in length, flexuose. Hook. E.) *Shoots* trailing, branched. *Leaves* tiled, but standing open; spear-strap-shaped, channelled, the point a little turned back. *Fruit-stalk* short, crooked. Sheathing involucrum short, roundish.

(REFLEXED JUNGERMANNIA. *J. juniperina.* Sw. Hook. E.) On shaded banks in the Highlands of Scotland. Dickson. (Prof. Hooker describes remarkably fine specimens, (almost a foot long,) by a cascade in a glen near the head of Loch Lomond. E.)

J. JULA'CEA. Shoots cylindrical, upright: leafits tiled on every side: flowers on fruit-stalks: (calyx large in proportion to the size of the plant. Hook. E.)

(*Hook. Jung.* 2—*E. Bot.* 1024. E.)—*Dill.* 73. 38.

Brittle. *Fruit-stalk* terminal. Neck. *Shoots* slender, cylindrical; silky, from half to one inch high; sometimes forked. *Leaves* so closely compressed as hardly to be observable, which distinguishes it from every other species. Web. Grows in very dense tufts; shoots and branches cylindrical, and silky when fresh. Dull greyish green, and brittle when dry. *Fructifications* rare. *Capsules* small, red brown. *Fruit-stalk* short, white, rising out of a toothed involucrum. Dill. Scales of the involucrum cloven, membranous. *Leaves* when magnified cloven, not unlike those of *J. curvifolia*. Griff. (*Leaves* never undivided, as in the figure of E. Bot. Hook. E.)

SILVERY ALPINE JUNGERMANNIA. E.) Wet rocks and by the side of rivulets on Cader Idris, Glyder and Snowdon, and the Highland mountains. Mr. Griffith. On rocks on the sides and tops of hills in Dartmoor, Devon. Mr. Newberry. P. Sept.—Oct.

J. CONCINNA'TA. (Stem erect, branched: leaves very closely imbricated, erect, concave, ovate, obtuse, emarginate: fruit terminal: calyx none. Hook. E.)

(*Hook. Jung.* 3—*E. Bot.* 2229—*Fl. Dan.* 1002. E.)

Grows matted in tufts, reddish brown above, pale green below. *Stalks* a quarter of an inch high, very slender, brittle when dry, closely tiled with leaves, thickest at the ends. *Leaves* undistinguishable by the naked eye, smooth, membranous at the edge, always pressed to. *Fruit-stalks* terminal, short. *Capsules* brown. Lightf. *Shoots* compressed, but obscurely four-cornered. *Scales* of the involucrum, entire, rounded, which distinguishes it from *J. julacea*. Griff. (with which it has very generally been confounded both on the Continent and in Britain. E.)

(MATTED JUNGERMANNIA. E.) Rocks on the Highland mountains frequent. On Snowdon. Mr. Griffith. Sept.—Oct.

J. RUPES'TRIS. Shoots cylindrical: leafits awl-shaped, pointing one way.

Dicks. H. S.—(*E. Bot.* 1277. E.)—*Dill.* 73. 40.

Whole *plant* very short, being about one-third of the length of a pin, blackish, upright, seldom branched. Linn. *Shoots* branched, dark green. *Leafits* bent back. *Involucrum* cylindrical, not tiled as in *J. alpina*. Web. Grows densely crowded together, short, naked below. *Leaves* very slender, reflexed, dark green, blackish when dry, pointing one way. *Involucrum* very minute, terminal, reddish, not scaly. *Fruit-stalk* very short. *Capsules* very small. Dill.

(DUSKY ROCK JUNGERMANNIA. E.) On moist rocks on Snowdon and Glyder, Carnarvonshire; north of England, and Highland mountains. Plentifully upon rocks on the sides and tops of hills in Dartmoor, Devon. Mr. Newberry. P. March—Oct.

J. TRICHOPHYL'LA. (Stem creeping, irregularly branched: leaves imbricated on all sides, here and there fasciculated, setaceous, jointed, patent straight: fruit terminal: calyx oblong, the mouth contracted, ciliated. Hook. E.)

(*Hook. Jung.* 7—*E. Bot.* 2252. E.)—*Schmid.* 42. 1 *to* 23—*Dill.* 73. 37.

Shoots only a few lines in length, closely surrounded by very slender leafits, of a pale yellow green. *Fruit-stalk* terminal. *Involucrum* long, cylindrical, cloven. Weis. When magnified, the leafits appear divided quite down to the base into three or four awl-shaped segments, composed of globular joints. *Fruit-stalk* half an inch long. *Capsules* black. Leers. *Leaves* pale green, extremely slender. *Branches* numerous, irregular. Dill. (Hooker describes the joints of the leaves as "a little longer than they are broad, and perfectly cylindrical." E.)

(Globular-jointed Jungermannia. E.) Turfy heaths near North Brierly, Yorkshire. Richardson, in Fl. Ang. 516. (On Craig Calleach and Schehallion, in Breadalbane, Perthshire; and on Ben Luyal, in the north of Sutherland. Dr. Hooker. E.) P. April.

J. alpi'na. Shoots cylindrical: leafits egg-shaped, expanding; involucrum tiled.

Dicks. H. S.—(*E. Bot.* 1278. E.)—*Fl. Dan.* 1002. 1—*Dill.* 73. 39.

Shoots half to one inch high, crowded together in tufts, branching into short forks. *Involucrum* terminal. *Fruit-stalk* seldom found; very short. Web. One to two inches long; cylindrical, not brittle. *Involucrum* scaly, light red, resembling the bud of the Beach tree. *Capsule* dark red. Dill.

(Chocolate Alpine Jungermannia. E.) Wet rocks on Snowdon and Glyder, Carnarvonshire, and Bogs on Cader Idris. Dillenius. On the mountains on the north of England. Hudson. And of the Highlands. Lightfoot. On the top of Carnedd Llewelyn. Griffith. P. April—Oct.

J. curvifo'lia. Shoots creeping, branched, cylindrical: leaves tiled, roundish, taper-pointed, cloven, the segments hooked. Dicks. ii. 15.

(*Hook. Jung.* 16—*E. Bot.* 1304. E.)—*Dicks.* 5. 7.

The points of the leaves next to the involucrum upright. Dicks. (*Fruit-stalk* about half an inch high, whitish and tender. *Capsule* dark brown, splitting into four acute valves, as in other species. E. Bot. (Colour of *leaves* and *surculi* pale green, changing to a fine purple, in those parts which are most exposed: Hook. E.)

Curve-leaved Jungermannia. (Forming patches of a deep purple colour, and a few inches in diameter. E.) Highlands of Scotland. Many places in the ascent to Crib y Ddeseil from Llanberris. On the summit of Carnedd Llewelyn, also near Llyn Llumbren, Denbighshire. Mr. Griffith.) (May. E.)

J. cine'rea. Shoots creeping, doubly winged above: fruit-stalk from the middle: sheath cylindrical: leaves rounded. Dicks. ii. 15.

Mich. 6. 18—*Dill.* 72. 28.

Grows creeping upon other mosses. *Shoots* short. *Leaves* round, grey, very small, tiled. If immersed in water and magnified, other secondary leafits may be found underneath these. Dill.

(Minute Grey Jungermannia. E.) Woods. Bagley Wood, near Oxford. Dillenius.

J. pu'mila. (Stem ascending, nearly simple: leaves elliptical, ovate: fruit terminal: calyx oblong-ovate, acuminate, the mouth contracted, denticulate. Hook. E.)

(*Hook. Jung.* 17—*E. Bot.* 2230. E.)—PLATE XVIII. f. 4.

Grows matted together. *Shoot* simple, about one-eighth of an inch high. *Leafits* six to eight, circular, entire, tiled, nearly opposite. *Sheath* toothed. *Fruit-stalk* terminal, a quarter of an inch long, or more.

(Pedunculated Jungermannia. E.) Communicated by J. Wynne Griffith, Esq. who first discovered it an Cwm Idwell. (Aberdour. Greville. Studley, Yorkshire. Hooker. On mountains near Bantry. Miss Hutchins. E.)

TARGIO'NIA.* *Calyx* of two valves, compressed, containing at bottom a *capsule*, nearly globular, many-seeded. See vol. 1, p. 370.

T. **HYPOPHYL'LA.** Fructifications solitary. calyx open. Dicks.

E. Bot. 287—*Mich.* 3, *Targionia*—*Dill.* 78. 9—*Buxb.* 1. 61. 4—*Col. Ecphr.* 1, *p.* 331, *f.* 333.

Not larger than the little finger nail. Green, not pellucid; rough with white rising dots *Leaf* heart-spear-shaped, at first green, afterwards dark purple, blackish underneath. *Fructification* at the end, on the underside, the size of a vetch. *Calyx* black; opening, containing the fruit covered with a yellowish skin, and filled with a yellowish pulp which rubs to powder between the fingers, and stains them. Col. Ecphr.

SINGLE-FRUITED TARGIONIA Moist heaths and sides of ditches, rare. Near Dawlish, Devonshire (Near the Tarbet of Cantire, on the confines of Knapdale. Lightfoot. E.) P. March—May.

T. **SPHÆROCAR'PUS.** Fructifications crowded together: calyxes perforated at the end. Dicks. 8.

E. Bot. 299—*Mich.* 3. *Sphærocarpos*—*Dill.* 78. 17.

Calyx reticulated like the leaf of a *Jungermannia* *Capsules* sessile; brownish when ripe. Dicks. The thick tops of this plant have much the appearance of some of the smaller Mosses, and have, doubtless, on that account been overlooked, but they have a glaucous hue which instantly announces them to the eye accustomed to observe them. Woodw.

(CLUSTERED TARGIONIA. E.) *Sphærocarpos terrestris.* E. Bot. Clover-fields, Heyden and Norwich. Mr. Bryant. Very common on our clover-fields in autumn, on sandy loams with *Riccia glauca*, the first year of the clover. Mr. Woodward.

MARCHANTIA.† Barr. Fl. *Calyx* salver-shaped: *Anthers* numerous, imbedded in its disk.

Fert. Fl. *Calyx* target-shaped, flowering on the under side: *Capsules* opening at the top: *Seeds* fixed to elastic fibres.

For a more particular account of the parts of fructification, see vol. i. p. 351 and 369.

M. **POLYMOR'PHA.** Leaf bluntly lobed: calyx of the fertile flowers mostly ten-cleft.

Schmid. 29. 1 *to* 30—*Hedw. Theor.* 24. 127 *to* 131, *fructification*—*E. Bot.* 210—*Dill.* 76. 6. E. F.—*Mich.* 1. 1 *and* 3—*Lon.* i. 319. 2—*Fuchs.* 473 (*misprinted* 476)—*Trag.* 523—*Matth.* 1039—*Lob. Obs.* 646. 1. *Ic.* ii. 246. 1—*Dod.* 473. 2—*Ger. Em.* 1565. 3—*Ger.* 1376—*Matth. a.* C. B. 732—*Gars.* 300.

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* (So named by Micheli in honour of his friend and fellow-labourer in natural history Dr. Cyprian TARGIONI of Florence, whose valuable museum has been highly celebrated. E.)

† (Named after M. MARCHANT, a French naturalist; author of some ingenious papers in the Memoirs of the Academy of Sciences. E.)

From three to five inches long, one broad, and irregularly lobed; dark green, shining: *Fruit-stalks* in the angles of the lobes, one to three inches high. *Capsules* greenish, dividing into eight or ten segments. On the upper surface we here and there observe certain glass-shaped conical cups, on short pedicles, with a wide and scolloped margin. Weis. which inclose about four little bodies, very finely serrated at the edges. Pol. In figure somewhat resembling an oak leaf; surface reticulated. Dill. (A very elaborate description of the structure of this plant may be seen in Muse. Brit. E.)

(STAR-HEADED MARCHANTIA or LIVER-GREEN. E.) In wet places both shady and open. On wet shady walks, and on the sides of wells and springs. P. June—Aug.

Var. 2. Plant smaller; not shining.

Dill. 77. 7—*Mich.* 1 *and* 2—*Lob. Obs. upper right hand fig.*—*Lob. Ic.* 216—*J. B.* iii. 758. 2.

Leaves smaller and shorter than in 1; fine green, not shining, not reticulated; densely compacted one upon another. Dill

On the north side of walls, and stones, and in shady areas behind houses. Dill. July—Aug.

Var. 2. Calyx with eight clefts.

Mich [illegible]

M. CRUCIATA. Fertile calyx with four divisions. segments tubular.

Dill. 75. 5—*Mich.* 4. *Lunaria*—*Buxb.* i. 62. 2.

Crowded in its growth, sometimes branched, new leaves proceeding from the ends of the old ones, from half to one inch long, pleasant green, not pellucid, not veined. *Calyx* with four, and sometimes five divisions. Dill. *Fruit-stalk* white, tender brittle: one to two inches high. Stackh.

(CROSS-SHAPED MARCHANTIA. E.) Shady courts and garden walks. P. June—Oct.

M. HEMISPHÆRICA. Leaf scolloped: fertile calyx five-cleft: hemispherical.

(*E. Bot.* 503. E.)—*Schmid.* 31—*Dill.* 75. 2—*Mich.* 2. 2—*Fl. Dan.* 762—*Buxb.* ii. 5. 1.

Head hemispherical, with five globules underneath. *Globules* bursting, and pouring out seeds. Linn. *Leaf* from half to one and a half inch long, concave, edge waved and scolloped; at first simple, cloven when older, and a young one issuing from the end. *Fruit-stalks* an inch high, brownish, naked. Dill.

(HEMISPHERICAL MARCHANTIA. E.) Sides of rivers and wet ditches, and wet rocks. P. April—May.

M. CO'NICA. Leaf forked, indented: fertile calyx somewhat egg-shaped, with about five cells underneath.

(*E. Bot.* 504. E.)—*Schmid.* 31—*Hedw. Theor.* 25. 134 *to* 136—*Mich.* 2. 1—*Dill.* 75. 1—*Vaill.* 33. 8—*Fl. Dan.* 271—*Col. Ecphr.* 331. 1—*Park.* 1314. 4.

Leaves pleasant pale green, slippery to the touch, creeping on the ground, dotted on the surface, producing new leaves from the end of the old ones.

Dill. *Barren flowers* on the leaf, resembling warts. Linn. *Fruit-stalks* three or four inches high, transparent, very tender. *Common calyx*, five cells bursting at the base, often varying in number from some proving abortive. *Seeds* when ripe hanging out attached to threads, having the appearance of the woolly substance which contains the seeds of *Lycoperdons*. Woodw. *Leaves* in large clusters, indented, blunt, green, with several white tubercles.

(Conical Marchantia. E.) On the ground on the banks of brooks in shady places, and sometimes on rocks. Dillenius. Very common, but I have only found it in fruit on the shady banks of a ditch at Ditchingham, Norfolk, where I have observed it for some years. Mr. Woodward. In a wet ditch near Belsey Bridge, Ditchingham. Mr. Stone. Road from Kingshill to Cam, Gloucestershire, in fruit. Mr. Baker. (Stream side, between Painswick and the Edge, in fruit. Mr. O. Roberts. E.)
P. March—April.

M. andro'gyna. Leaf forked, segments strap-shaped: fertile calyx entire, hemispherical.

Dicks. H. S.—(*E. Bot.* 2545. E.)—*Dill.* 75. 3. A. C.—*Mich.* 2. 3—*Dill.* 75. 3. B.

Shoots strap-shaped, forked, dotted; often notched at the end; mid-rib blackish. Web. *Fruit-stalk* terminal, half to one inch high. *Plant* green, strap-shaped, smooth, flat, in forked divisions. Dill. (Dr. Hooker suspects that the fig. in E. Bot. above cited, (excluding the two lower), rather belongs to *M. hæmisphærica*.

Androgynous Marchantia. E.) Under wet rocks on the mountains of Scotland. Dickson. ii. 17.

BLA'SIA.* Barr. Fl. solitary, imbedded in the substance of the leaf.
Fert. Fl. *Capsule* egg-shaped, one-celled, crowned with a tube through which the seeds escape. See vol. i. pp. 352 and 371.

B. pusil'la.

(*Hook. Jung.* 82. 83. 84—*E. Bot.* 1328. E.)—*Schmid. Blasia.*—*Hedw. Theor.* 27. 156 *to* 164—*Dill.* 31. 7—*Mich.* 7. *Blasia.*—*Fl. Dan.* 45.

Seeds when ripe flowing out of a cup-like cylindrical vessel, so small that their figure is not discernible to the naked eye. Linn. Suec. n. 1053. *Leaves* in a circle from one to two inches in diameter, deep purple at the base, green at the edges, jagged. Grows in a circular form in shady places. *Leaves* thin, green, pellucid, with whitish veins towards the base, waved at the edge, cloven at the ends. *Fruit-stalk* one-eighth of an inch high, several rising in succession from near the ends of the leaves. Dill. (It bears *capsules* in the Spring months: *gemmæ* throughout the whole year. E.) †

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* (Named by Micheli, after Blasi, an Italian monk, addicted to the study of Botany. E.)

† (' Besides the means of increase by seed, some of the *Jungermanniæ*, like most other Cryptogamous plants, possess the property of propagating their kind by *gemmæ*; in the same way as many species of *Allium*, *Polygonum viviparum*, &c. among the Phænogamous. Hook. E.)

(DWARF BLASIA. JUNGERMANNIA BLASIA. Three illustrative plates, and a very ingenious dissertation, are bestowed upon this little plant, by Dr. Hooker, to prove that it does not properly belong to the genus to which authors have hitherto referred it, but rather to *Jungermannia.* E.) On the sides of ditches and rivers in a sandy soil. At the breaking of Medlock River Bank at Feasington Wood between Garret and Knotmill, about a mile from Manchester. Harrison, in Dill. 238. Near Halifax. Bolton. On Hounslow Heath. Hudson. (and on Shotover-hill, April, 1821, in full fructification, by Mr. Baxter, though rarely found in that state in so southern a station. Purton. E.) P. Aug.—Nov.

RIC'CIA.* *Capsules* sessile, globular, one-celled, attached to the apex of the leaf, and containing from twenty to thirty seeds. See vol. i. pp. 352 and 371.

R. NA'TANS. Leaves inversely heart-shaped: fringed.

E. Bot. 252—*Dill.* 78. 18.

The edges of the leaves are not really fringed, but assume that appearance in consequence of their sending out fibrous roots. Web. About half an inch long. *Fringe* sometimes white. Schol. *Leaves* sometimes only inversely egg-shaped, and without any notch at the end, entire at the edge, bright green. Web. Very nearly allied to *Targionia hypophylla.* Huds.

(FLOATING RICCIA. E.) Pools about Hadley, Suffolk. Buddle, in Dill. 537. Sawston Moor, Cambridgeshire. Mr. Relhan. A. Aug.—Oct.

R. MIN'IMA. Leaves smooth, deeply divided: acute.

Dill. 78. 11—*Mich.* 57. 6, *magnified*—*Schmid.* 45. 3, *ends of the segments blunt.*

Shoots hardly a line in breadth, generally forked, entire and pointed, or else notched at the end. In the substance and towards the base of the leaf, in the month of October we may observe greenish globules, changing to brown and then to black. Web.

(Identified with the following in Musc. Brit. E.)

(LEAST RICCIA. E.) On Blackheath, near Greenwich. Dillenius. In places that have been overflowed. Hudson. A. Nov.—Dec.

R. GLAU'CA. Leaves smooth, channelled, two-lobed, blunt.

Schmid 44. 1—*Hedw. Theor.* 29. 165 *to* 174—(*Purt.* 5—*E. Bot.* 2546. E.)—*Vaill.* 19. 1—*Fl. Dan.* 898. 1—*Mich.* 57. 4—*Dill.* 78. 10—*Buxb.* ii. 5. 5.

I have frequently observed black spots immersed in the substance of the leaves, which are what Micheli has described as capsules full of seeds; and which has been since clearly ascertained by Hedwig. Woodw. *Leaves* small, the under side firmly fixed to the ground, adhering at the base to each other, deeply divided, Pol. whitish green, thick, slippery, very smooth, broadish, furrowed on the upper side, frequently forked; segments blunt. Web. Growing in a circular form. *Leaves* thick, issuing from a centre, often cloven. *Roots* fine black fibres from the under surface of the plant which floats on the water. Ray. I have never seen it on the water, but in roads and wet corn-fields both in spring and autumn. Dill.

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* (A name conferred by Micheli, in honour of Signor RICCI, an Italian knight. E.)

(With the above-described species, under the name *R. crystallina,* Drs. Hooker and Taylor include

Var. *a.* Frond fleshy, glaucous, channelled, segments acute. *R. glauca,* and *R. minima.* Linn.

Var. *β.* Frond thin, nearly plane, yellowish green, segments obtuse. *R. crystallina.* Linn. Depending on age and place of growth: the first var. growing on banks in dry and exposed situations: the latter in moist spots, as the mould of garden pots in the greenhouse and stove. E.)

(Glaucous Riccia. E.) Sandy moist heaths. In the same situations, and usually growing with *Turgionia Sphærocarpus.* Mr. Woodward. In clover stubbles near Bungay, Suffolk, frequently. Mr. Stone.
A. Oct.—April.

R. FLU'ITANS. Leaves forked, strap-thread-shaped.

Vaill. 19. 3—*Dill.* 74. 47—*Mich.* 4. 6—*E. Bot.* 251—*Pet. Mus.* 2. 253—*Fl. Dan.* 275.

Not having seen its fructifications, it is still a doubt whether it really belongs to this genus. Linn. Floating in stagnant water; brown green in spring, pure green in summer. Dill.

(Forked-leaved Riccia. E.) Ditches and sides of pools. P. Jan.—Dec.

ANTHO'CEROS.[*] *Capsule* awl-shaped, two-valved: *Seeds* fixed to the partition or to the valves. See vol. i. pp. 352 and 3170.

A. PUNCTA'TUS. Leaf curled, indented, jagged, dotted.

(*Schmid.* 47—*E. Bot.* 1537. E.)—*Dill.* 68. 1—*Mich.* 7. 2—*Fl. Dan.* 396.

Capsules and *fruit-stalks* from one to three inches long, spreading wide in shady places. *Leaves* short, scolloped, jagged, thin, pellucid, deep green. *Fruit-stalks* green, numerous, sheathed at the base. The whole plant turns black when dried in paper. Dill. *Leaves* deep green, crisp, resembling *Jungermannia pinguis.* *Fruit-stalks* simple, issuing out of a lopped sheathing involucrum. *Capsules* at the end of the fruit-stalk; valves two, bursting. *Seeds* adhering to a columnar receptacle. Woodw. Dots on the leaves black. Web.

(Jagged-leaved Anthoceros, or Spotted Horn-flower. E.) On heaths in moist shady places. Ellingham fen, Bungay, near the direction post. Mr. Stone. Brome, Norfolk, on the borders between the high and boggy ground. Woodward. (In a stubble field at Kinwarton, Warwickshire. Mr. Purton. E.) P. Aug.—April.

(A. LÆ'VIS. Leaf undivided, indented, smooth.

Dill. 68. 2—(*E. Bot.* 1538. E.)

When recent, of a rich velvety green colour; the texture most beautiful when held to the light, but without spots, Stackh. who thinks this and *A. punctatus* may probably be one and the same species; *lævis* the plant when barren, *punctatus* when fruiting, for the spots when highly magnified exhibit clusters of seeds or fertile flowers: and Dill. 68, 1 and 2, seem to countenance this hypothesis.

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[*] (From ανθος, a flower; and κερας, a horn: the latter word supposed by etymologists to refer to the ancient drinking-vessels, and thus in Homer. In the present instance the curled, concave leaves of the plants bear some resemblance to these cups: though, by another interpretation, the term might, perhaps with equal propriety, be considered descriptive of the erect capsules and fruit-stalks. E.)

(These suggestions of Mr. Stackhouse are in some degree corroborated by the researches of Drs. Hooker and Taylor. E.)

(BROAD-LEAVED ANTHOCEROS. *A. major.* E. Bot. First discovered in Britain by Mr. Stackhouse, in a shady over-hanging cavity in Fowey Harbour. Upon a tomb-stone on the north side of Arrow Church, Warwickshire: and on a ditch bank in a wet lane, near to Llanvayer Rectory, Monmouthshire. Mr. Purton. E.)

A. MULTIFIDUS. Leaf with doubly winged clefts: segments strap-shaped.

Dill. 68. 4.

Dillenius had not discovered this plant, but figured it from specimens sent by Haller. I am indebted to Mr. Dickson for specimens. Resembles *Riccia fluitans*, but the segments are pointed, not lopped at the end.

(WING-CLEFT ANTHOCEROS. Respecting this production, so imperfectly understood, the authors of Musc. Brit. state: "Whether we consider the descriptions of Dickson and Dillenius, or the figure of the latter, we have little hesitation in supposing that plant to be *Jungermannia multifida.*" E.)